







A HISTORY  
OF  
THE BIRDS OF EUROPE,

INCLUDING ALL THE SPECIES INHABITING THE  
WESTERN PALÆARCTIC REGION.

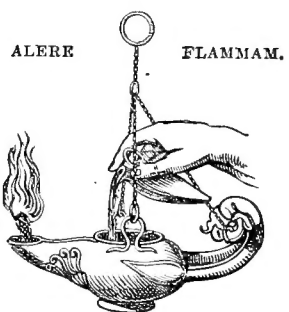
BY  
H. E. DRESSER, F.L.S., F.Z.S., ETC.

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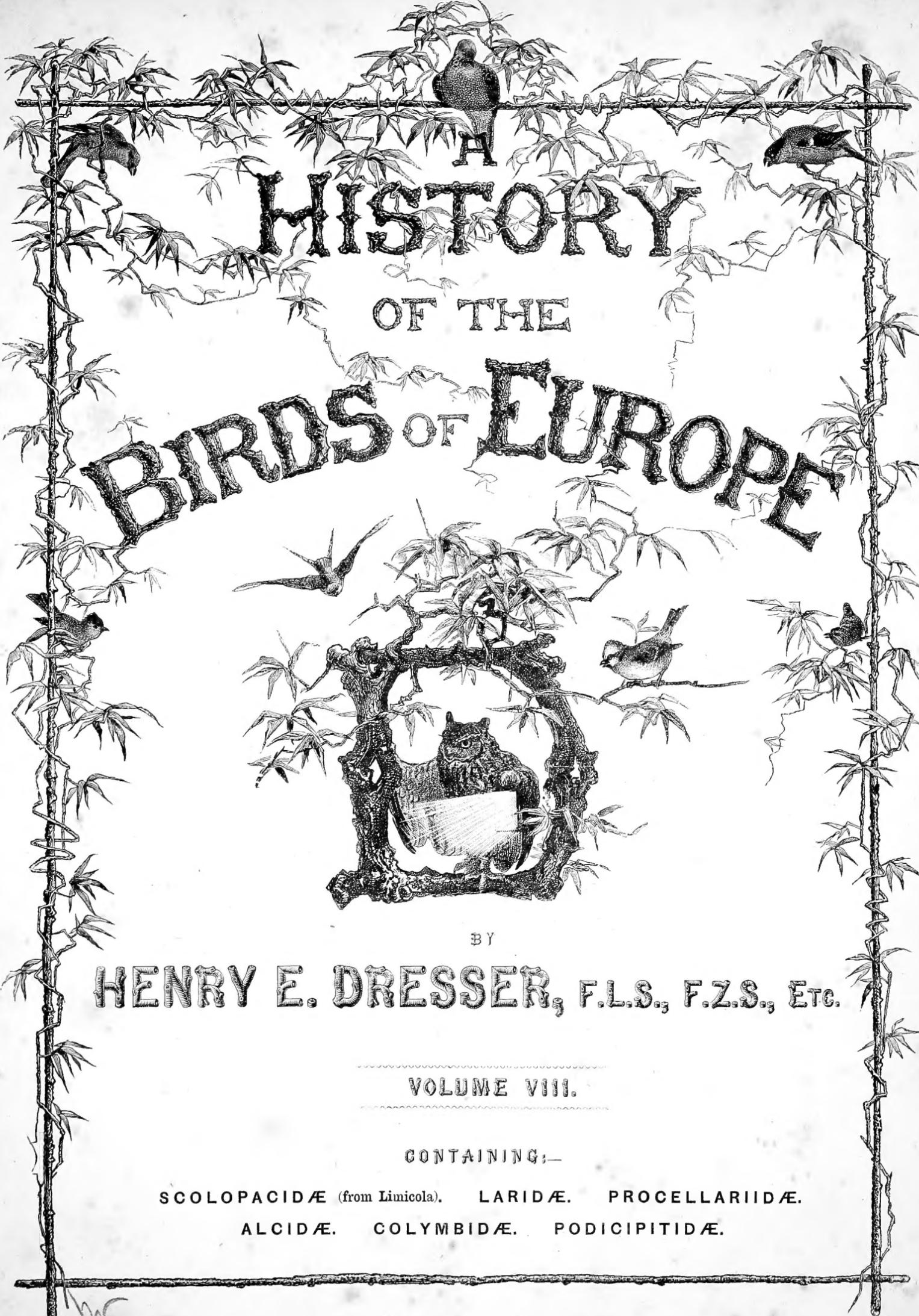
VOLUME VIII.

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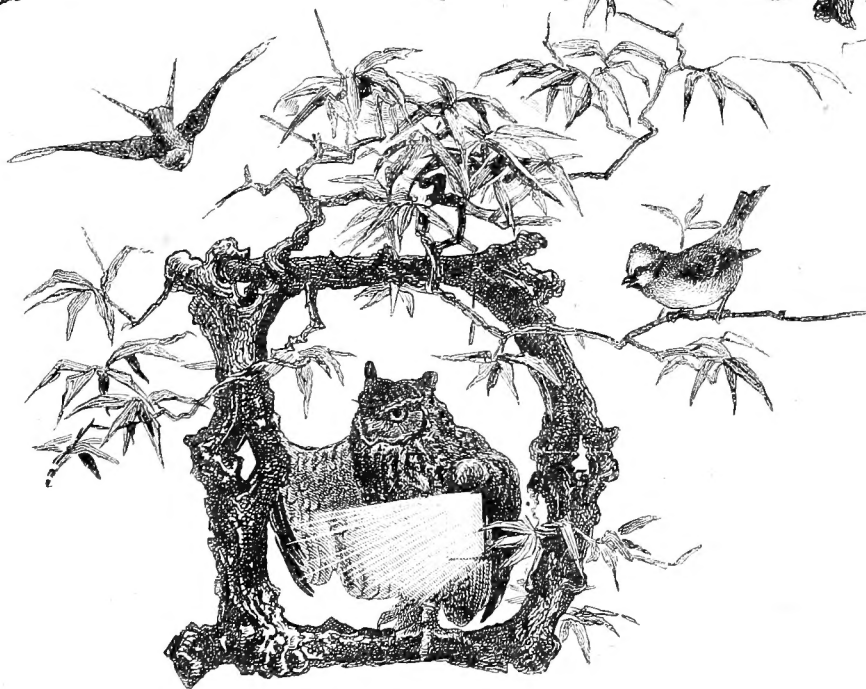
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A  
HISTORY  
OF THE  
BIRDS OF EUROPE



BY

HENRY E. DRESSER, F.L.S., F.Z.S., ETC.

VOLUME VIII.

CONTAINING:—

SCOLOPACIDÆ (from Limicola). LARIDÆ. PROCELLARIIDÆ.  
ALCIDÆ. COLYMBIDÆ. PODICIPITIDÆ.



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## LETTERPRESS TO VOL. VIII.

Genera and Species.	Date of publication.	Issued in Part	Pages in article.	Final paging.
199. LIMICOLA . . . . .	1880	80	1	1
535. Limicola platyrhyncha . . . . .	1876	51, 52	6	3-8
200. TRINGA . . . . .	1880	80	1	9
536. Tringa maculata . . . . .	1878	69, 70	3	11-13
537. Tringa fuscicollis . . . . .	1873	20	5	15-19
538. Tringa alpina . . . . .	1876	49	8	21-28
539. Tringa minuta . . . . .	1871	7	10	29-38
Tringa minuta. Appendix . . . . .	1876	47, 48	6	39-44
540. Tringa temmincki . . . . .	1871	7	6	45-50
541. Tringa minutella . . . . .	1872	11, 12	7	51-57
542. Tringa subarquata . . . . .	1878	67, 68	10	59-68
543. Tringa striata . . . . .	1877	57, 58	8	69-76
544. Tringa canutus . . . . .	1877	59, 60	7	77-83
201. MACHETES. . . . .	1880	80	1	85
545. Machetes pugnax . . . . .	1878	69, 70	11	87-97
202. CALIDRIS . . . . .	1880	80	1	99
546. Calidris arenaria . . . . .	1877	59, 60	8	101-108
203. TRYNGITES. . . . .	1880	80	1	109
547. Tryngites rufescens . . . . .	1876	47, 48	5	111-115
204. ACTITURUS. . . . .	1880	80	1	117
548. Actiturus longicaudus . . . . .	1877	59, 60	6	119-124
205. TOTANUS . . . . .	1880	80	2	125, 126
549. Totanus hypoleucus . . . . .	1877	61, 62	8	127-134
550. Totanus ochropus . . . . .	1876	53	8	135-142
551. Totanus glareola . . . . .	1877	57, 58	7	143-149
552. Totanus stagnatilis . . . . .	1871	1	5	151-155
553. Totanus calidris . . . . .	1875	39	7	157-163
554. Totanus fuscus. . . . .	1875	40	8	165-172
555. Totanus canescens . . . . .	1871	5	11	173-183

Genera and Species.	Date of publication.	Issued in Part	Pages in article.	Final paging.
206. <b>MACRORHAMPHUS</b> . . . . .	1880	80	1	185
556. <i>Macrorhamphus griseus</i> . . . . .	1878	67, 68	5	187-191
207. <b>TEREKIA</b> . . . . .	1880	80	1	193
557. <i>Terekia cinerea</i> . . . . .	1871	4	6	195-200
208. <b>LIMOSA</b> . . . . .	1880	80	1	201
558. <i>Limosa lapponica</i> . . . . .	1872	15	7	203-209
559. <i>Limosa ægocephala</i> . . . . .	1872	15	7	211-217
209. <b>NUMENIUS</b> . . . . .	1880	80	1	219
560. <i>Numenius borealis</i> . . . . .	1873	16	6	221-226
561. <i>Numenius phæopus</i> . . . . .	1873	17	9	227-235
562. <i>Numenius tenuirostris</i> . . . . .	1871	3	5	237-241
563. <i>Numenius arquatus</i> . . . . .	1873	18	10	243-252
210. <b>STERNA</b> . . . . .	1880	80	2	253, 254
564. <i>Sterna hirundo</i> . . . . .	1872	11, 12	7	255-261
565. <i>Sterna fluviatilis</i> . . . . .	1871	8	10	263-272
566. <i>Sterna dougalli</i> . . . . .	1876	54	5	273-277
567. <i>Sterna minuta</i> . . . . .	1876	55, 56	5	279-283
568. <i>Sterna media</i> . . . . .	1878	71, 72	4	285-288
569. <i>Sterna caspia</i> . . . . .	1877	59, 60	6	289-294
570. <i>Sterna anglica</i> . . . . .	1877	61, 62	6	295-300
571. <i>Sterna cantiaca</i> . . . . .	1877	59, 60	6	301-306
572. <i>Sterna fuliginosa</i> . . . . .	1877	61, 62	6	307-312
211. <b>HYDROCHELIDON</b> . . . . .	1880	80	1	313
573. <i>Hydrochelidon hybrida</i> . . . . .	1877	57, 58	6	315-320
574. <i>Hydrochelidon leucoptera</i> . . . . .	1875	45	5	321-325
575. <i>Hydrochelidon nigra</i> . . . . .	1876	54	8	327-334
212. <b>XEMA</b> . . . . .	1880	80	1	335
576. <i>Xema sabinii</i> . . . . .	1874	31	4	337-340
213. <b>RHODOSTETHIA</b> . . . . .	1880	80	1	341
577. <i>Rhodostethia rosea</i> . . . . .	1877	59, 60	3	343-345
214. <b>PAGOPHILA</b> . . . . .	1880	80	1	347
578. <i>Pagophila eburnea</i> . . . . .	1877	59, 60	6	349-354
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579. <i>Larus ridibundus</i> . . . . .	1878	71, 72	7	357-363
580. <i>Larus melanocephalus</i> . . . . .	1878	71, 72	4	365-368
581. <i>Larus ichthyaëtus</i> . . . . .	1873	18	3	369-371

Genera and Species.	Date of publication.	Issued in Part	Pages in article.	Final paging.
582. <i>Larus minutus</i> . . . . .	1871	4	8	373-380
583. <i>Larus canus</i> . . . . .	1873	17	8	381-388
584. <i>Larus gelastes</i> . . . . .	1878	71, 72	5	389-393
585. <i>Larus audouini</i> . . . . .	1878	69, 70	3	395-397
586. <i>Larus argentatus</i> . . . . .	1873	22	11	399-409
587. <i>Larus leucophæus</i> . . . . .	1873	22	6	411-416
588. <i>Larus affinis</i> . . . . .	1880	80	3	417-419
589. <i>Larus fuscus</i> . . . . .	1873	16	6	421-426
590. <i>Larus marinus</i> . . . . .	1872	15	6	427-432
591. <i>Larus glaucus</i> . . . . .	1877	59, 60	6	433-438
592. <i>Larus leucopterus</i> . . . . .	1876	49	5	439-443
216. <i>RISSA</i> . . . . .	1880	80	1	445
593. <i>Rissa tridactyla</i> . . . . .	1878	71, 72	7	447-453
217. <i>STERCORARIUS</i> . . . . .	1880	80	1	455
594. <i>Stercorarius catarrhactes</i> . . . . .	1875	41, 42	6	457-462
595. <i>Stercorarius pomatorhinus</i> . . . . .	1877	57, 58	7	463-469
596. <i>Stercorarius crepidatus</i> . . . . .	1876	55, 56	9	471-479
597. <i>Stercorarius parasiticus</i> . . . . .	1876	51, 52	7	481-487
218. <i>PROCELLARIA</i> . . . . .	1880	80	1	489
598. ( <i>Thalassidroma</i> ) <i>Procellaria pelagica</i> . . . . .	1874	29, 30	5	491-495
599. ( <i>Thalassidroma</i> ) <i>P. leucorrhœa</i> . . . . .	1874	26	6	497-502
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600. <i>Oceanites oceanicus</i> . . . . .	1878	67, 68	6	505-510
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602. <i>Puffinus anglorum</i> . . . . .	1876	55, 56	6	517-522
603. <i>Puffinus griseus</i> . . . . .	1877	61, 62	4	523-526
604. <i>Puffinus major</i> . . . . .	1877	61, 62	5	527-531
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606. <i>Œstrelata hæsitata</i> . . . . .	1880	77-79	4	545-548
223. <i>BULWERIA</i> . . . . .	1880	80	1	549
607. <i>Bulweria columbina</i> . . . . .	1878	67, 68	3	551-553
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608. <i>Alca torda</i> . . . . .	1877	61, 62	5	557-561
609. <i>Alca impennis</i> . . . . .	1880	77-79	4	563-566

Genera and Species.		Date of publication.	Issued in Part	Pages in article.	Final paging.
610.	<i>Alca troile</i> . . . . .	1877	63, 64	8	567-574
611.	<i>Alca bruennichi</i> . . . . .	1877	59, 60	4	575-578
225.	<i>URIA</i> . . . . .	1880	80	1	579
612.	<i>Uria grylle</i> . . . . .	1877	63, 64	6	581-586
613.	<i>Uria mandti</i> . . . . .	1877	63, 64	2	587-588
226.	<i>MERGULUS</i> . . . . .	1880	80	1	589
614.	<i>Mergulus alle</i> . . . . .	1877	59, 60	5	591-595
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228.	<i>COLYMBUS</i> . . . . .	1880	80	1	607
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620.	<i>Podiceps griseigena</i> . . . . .	1878	71, 72	6	639-644
621.	<i>Podiceps auritus</i> . . . . .	1879	75, 76	6	645-650
622.	<i>Podiceps nigricollis</i> . . . . .	1878	71, 72	7	651-657
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## Genus LIMICOLA.

*Numenius* apud Bechstein, Orn. Taschenb. p. 277 (1802).

*Tringa* apud Temminck, Man. d'Orn. p. 398 (1815).

*Limicola*, Koch, Baier. Zool. i. p. 316 (1816).

*Falcinellus* apud Kaup, Natürl. Syst. p. 37 (1829).

*Pelidna* apud Bonaparte, Comp. List, p. 50 (1838).

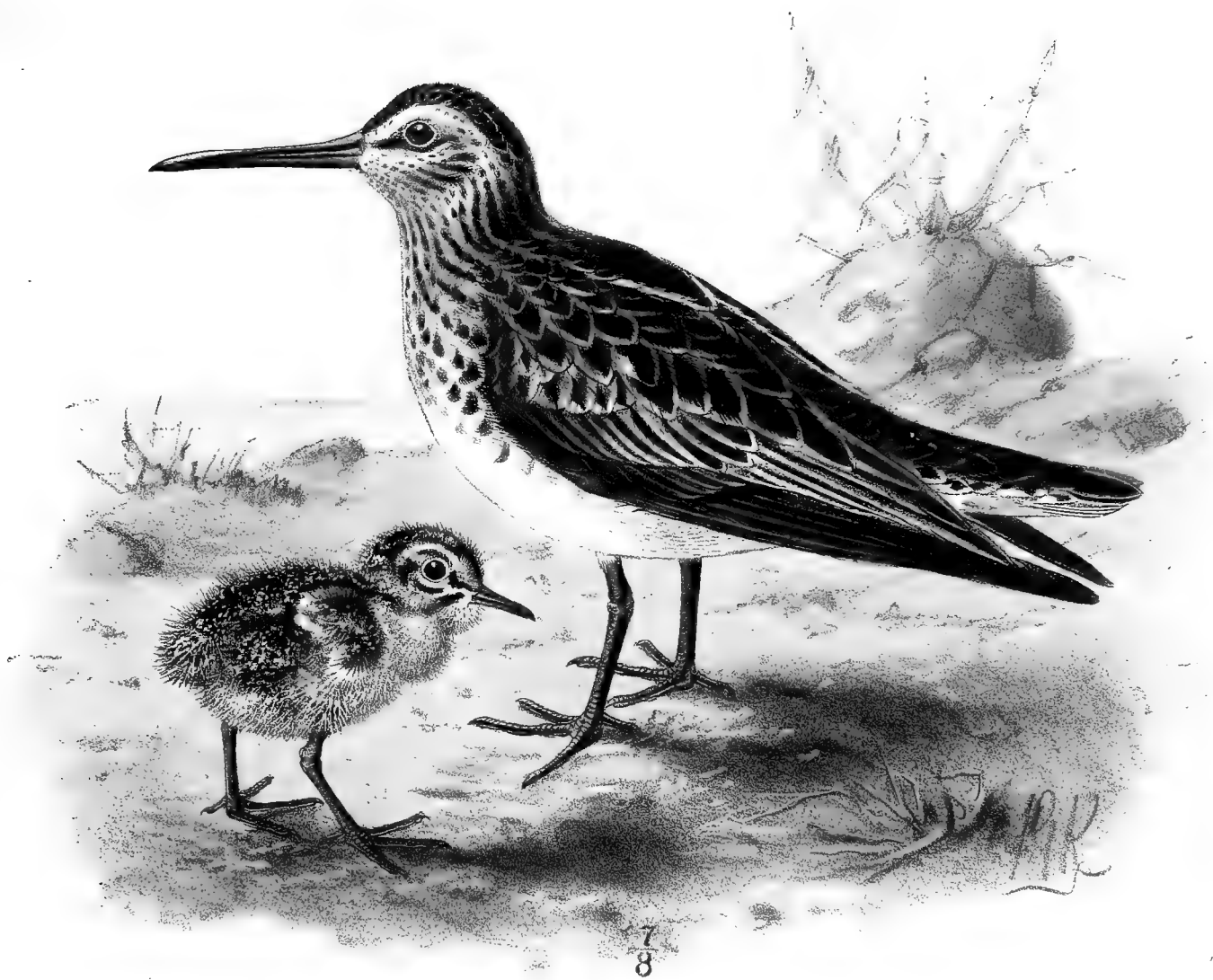
THIS genus contains only two, closely allied species:—*Limicola platyrhyncha*, which inhabits the Palæarctic Region about as far east as the Himalayas, the Oriental and Ethiopian Regions; and *Limicola sibirica*, which replaces *Limicola platyrhyncha* in the eastern portion of the Palæarctic Region.

These birds frequent the shores of lakes, marshes, and damp, inland places, not being, as a rule, found on the sea-coast. They walk with ease and run tolerably fast, resembling, to a great extent, the Jack Snipe both in their general movements and in their flight. I have never heard the note of the Broad-billed Sandpiper; but it is said to utter a loud twittering call when on the wing. These birds feed on small worms and insects of various kinds, which they pick up in the marshes and on the shores of lakes and pools. Their nest is a rather deep depression in a tussock in some marshy place, lined with grass or withered leaves; and the eggs, four in number, are lighter or darker stone-buff, closely marked with dark umber or rich reddish brown.

*Limicola platyrhyncha*, the type of the genus, has the bill much longer than the head, nearly as broad as high at the base, very flat and wide up to the tip, where it is gradually rounded to an obtuse point, terminal portion of the bill slightly decurved, nasal depression short; nostrils small, basal, elongated; wings very long, pointed, the first quill longest, inner secondaries rather long and pointed; tail doubly emarginate, moderately long; legs rather short, slender, the tibia bare on the lower part; tarsus scutellate; hind toe moderate, anterior toes long, slender, slightly webbed at the base; claws slender, slightly curved, obtuse, that on the middle toe a little dilated on the inner edge.







J.G. Keulemans lith

M & N Hanhart imp

**BROADBILLED SANDPIPER.**  
*LIMICOLA PLATYRHYNCHA.*

# LIMICOLA PLATYRHYNCHA.

(BROAD-BILLED SANDPIPER.)

- Numenius pygmaeus*, Bechst. Orn. Taschenb. p. 277 (1802, nec Lath.).  
*Numenius pusillus*, Bechst. Gemeinn. Naturg. Deutschl. iv. p. 152 (1809, nec Linn.).  
*Tringa platyrhincha*, Temm. Man. d'Orn. p. 398 (1815).  
*Limicola pygmæa*, Koch, Baier. Zool. i. p. 316 (1816).  
*Tringa elorioides*, Vieill. Nouv. Dict. xxxiv. p. 463 (1819).  
*Tringa platyrhyncha*, Meyer, Orn. Taschenb. iii. p. 259 (1822).  
*Tringa pygmea* (Bechst.), Savi, Orn. Tosc. ii. p. 291 (1829).  
*Pelidna platyrhyncha* (Temm.), Bp. Comp. List, p. 50 (1838).  
*Pelidna megarhynchos*, C. L. Brehm, Vogelfang, p. 317 (1855).  
*Limicola hartlaubi*, Verr. in Vinson's Voy. Madagascar, Annexe B, p. 5 (1865).

*Bécasseau platyrhynque*, French; *kleiner Sumpfläufer*, German; *Brednæbet-Strandlober*, Danish; *Brednæbbet Strandvipe*, Norwegian; *Myrsnäppa*, *Brednäbbad strandvipa*, Swedish; *Jänkkasirriäinen*, Finnish.

## *Figuræ notabiles.*

Werner, Atlas, *Gralles*, pl. 10; Kjærb. Orn. Dan. taf. 35; Fritsch, Vög. Eur. taf. 38. fig. 1; Naumann, Vög. Deutschl. taf. 207. figs. 1, 2; Sundevall, Svensk. Fogl. pl. 43. fig. 3; Gould, B. of Eur. pl. 331; id. B. of G. Brit. iv. pl. 75; Bechst. Orn. Taschenb. taf. 21.

*Ad. ptil. æst.* capite et corpore suprâ nigris, plumis vix albido et rufescente cervino marginatis, supra oculos usque ad nucham striâ albidâ productâ: uropygio fere omnino nigro: remigibus nigricantibus rhachibus albis, secundariis vix albido apicatis: rectricibus duabus centralibus elongatis, nigris, vix rufescente cervino marginatis, reliquis cinereis albo marginatis: corpore subtùs albo, capitis lateribus, gulâ et hypochondriis fusco et fusco-cinereo maculatis: rostro nigricante vix viridi tincto, pedibus griseo-ochraceis: iride fuscâ.

*Ptil. hiem.* suprâ pallidè cinereus vix fusco tinctus, plumis centraliter fusco notatis: uropygio nigro, plumis pallidiore marginatis: subtùs albus, gulâ vix nigricante griseo striatâ.

*Adult in summer* (Uleåborg, Finland, 12th June, 1861). Crown and nape black, slightly varied with buffy white and rufous buff; over the eye to the hind neck a broad greyish line, varied with buffy brown, passes; hind neck much varied with greyish; upper parts otherwise black, the feathers slightly margined and tipped with rufous and buffy white; rump scarcely marked with these colours, and the upper tail-coverts nearly pure dull black; quills blackish, the shafts white; secondaries very narrowly tipped with white; scapulars like the back, and the wing-coverts blackish grey with dull white margins, and slightly varied with dull rufous; the two central rectrices rather elongated, black, margined with rufous, the remaining tail-feathers grey, edged with white; underparts white; the sides of the head, throat, and flanks spotted and marked with brown and brownish grey; a dark streak

passes from the base of the bill through and slightly below the eye to the hind neck; bill blackish mud-green; inside of mouth dark flesh-colour; legs yellowish grey with dark leaden grey tarsal joints and toes; claws black. Total length about 6 inches, culmen 1·3, wing 4·1, tail 1·6, tarsus 0·88.

*Adult Female.* Resembles the male, but has the feathers on the upper parts rather more broadly margined, and the throat appears, as a rule, to be less spotted; but these differences are very slight.

*Adult in winter (Egypt).* Upper parts generally ashy grey with a dusty brownish tinge, the centres of the feathers darker; rump black, most of the feathers with light margins; wings and tail as in the summer dress, but rather lighter; underparts white; the throat slightly marked with small, short, blackish grey striations.

*Young in down (Muonioniska).* A narrow stripe from the base of the upper mandible, widening towards the centre of the crown until it covers the whole hind crown, black tinged with chestnut, and on the hind crown spotted with white; upper parts generally black, minutely spotted with white, and marked with chestnut on the sides; sides of the head and fore crown and underparts white, tinged with buff on the throat; a black patch before the eye, below which a black line passes along the side of the head to the nape.

*Young in first autumn.* Scarcely differs from the adult bird in summer plumage, the only difference being that the young bird has the feathers on the upper parts a trifle more broadly margined with dull greyish white.

*Obs.* M. G. Lunel (Bull. Soc. Orn. Suisse, p. 31, pl. 1) remarks that the chin of the present species is devoid of feathers. Judging, however, from the series I have before me, the specimen, the bill of which he figures, must have had the chin unusually bare; for in all of mine the feathers extend over only a little less area than in other allied waders; and this character pointed out by M. Lunel is only a slight one.

DURING the summer season the present species inhabits the northern portions of Scandinavia and Russia, migrating in the autumn down into Southern Europe; and though nowhere numerous, it has in the autumn and winter been met with in most parts of Europe, except in the extreme west; and it is stated to have occurred in North Africa. In Asia it is found at least as far east as India; but it is difficult to define the limit of its range there, as it is replaced in China by a somewhat closely allied species, but which appears to me to be fairly separable; I have therefore described it under the name of *Limicola sibirica*. There appear to be but four instances of its occurrence in England—three at Breydon Harbour (viz. on the 25th May 1836, on the 25th May 1856, and on the 23rd April 1868), and one at Shoreham, Sussex (in October 1845). It has not been recorded from Scotland; but, according to Thompson (B. of Ireland, ii. p. 282), one was killed on the shores of Belfast Bay, in Ireland, on the 4th October, 1844. In Scandinavia it is common in the summer. Mr. Collett says that it breeds in Finmark, Northern Norway (as for instance at Bodö), and also on the southern fells (where it occurs commonly on the branches of the Dovre and Langfjelden). It breeds on the fells of the Gudbrandsdale down to the Neverfjeld, near Lillehammer, on the Jotunfjeld, at Vinstervandene, and frequently on the Valdarsfjeldene down to Land in  $60\frac{1}{2}^{\circ}$  N. lat. On passage it visits the lowlands sparingly, and has been shot in the Ørkedale, and has also on several occasions been obtained near Christiania

in the autumn. In Sweden it breeds in the high north, and visits the coasts during passage, and only in small numbers, either singly or in company with the Dunlin. The records of its occurrence in Finland are but scanty. Neither Schrader, Malm, Middendorff, nor Liljeborg record it from the northern districts; but Dr. Palmén says that since Wolley found it breeding at Munio, its eggs have been received from many adjacent places, such as Ylikylä, Salmijärvi, &c. Sahlberg obtained a bird of this species at Deveätoï, on the east side of the Lapland peninsula, in August 1870; but it only occurs rarely in Finland, on passage. According to Nylander it was found on Karlö, off Uleåborg, early in August 1856; and I obtained a specimen and saw another in June close to Uleåborg, and believe they were breeding near there. Otherwise Dr. Palmén says the records of its occurrence are only from the southern districts. The late Mr. Ekebom received three from Esbo, in June 1841; and Mr. V. Falk a male in Helsinge, on the 14th August 1841. Mr. Blomqvist met with it in Uskela on the 4th June, 1856; and one was obtained near Helsingfors late in September 1871.

I have no data from Mr. Sabanäeff respecting its occurrence in Central Russia, where it appears probable that it is found during passage; for it is found near Archangel in summer. In the countries skirting the south of the Baltic it is met with, though sparingly, during passage; and Mr. E. von Homeyer states (J. f. O. 1872, p. 309) that it appears annually on the islands west of Rügen, but very sparingly, and almost always in the same localities, and he never observed it on the open sea-coast. Naumann says that it occurs rarely in Germany during passage, and is more often seen in spring than on the autumnal migration. It passes northward late in April or in May, and returns in August and September. Mr. A. Benzon informs me that it is a straggler to Denmark during migration, and frequents the freshwater lakes and morasses, whereas the Dunlin is always seen on the edges of the salt water; and Kjærbölling writes that it visits the coasts of Denmark in April and May, and again in August and September, either singly or in company with other species. Mr. Scheel says that about fourteen have been shot on Moen. Teilman obtained it at Kjärup, in Fyen, in August 1843, and Wöldike in Holstein in July 1846. Mr. Gätke states (J. f. O. 1856, p. 378) that he has shot six examples on Heligoland; and Baron von Droste Hülshoff says that it has been obtained on the island of Borkum, but that there is no certain proof of its occurrence in East Friesland. It occurs on migration at irregular intervals on the northern coasts of France, and also on the shores of the Mediterranean, Loche having obtained several in the salt marshes of Aigues-Mortes in 1853. It does not appear to have occurred in Spain; but it is found in Italy, having been obtained at rare intervals in Venetia, Lombardy, and Liguria, once in Piedmont, and in May 1863 Savi obtained nine at one time in full breeding-dress. In Sicily it is very rare; and Professor Doderlein only records one instance of its having been obtained, near Girgenti. It is only known as a straggler to Southern Germany; and Dr. A. Fritsch, who states (J. f. O. 1871, p. 388) that it occurs very sparingly in Bohemia, adds that a specimen was shot on the 16th May, 1853, by Hugo Ostrdal, at Lake Oplatil, near Pardubic. According to Dr. Krüper it is met with in Greece in winter; and Mr. Robson has shot it on the Bosphorus. Mr. H. Goebel says that he shot a pair in the Uman district, in Southern Russia; and Professor von Nordmann records a single occurrence, a specimen having been brought to him by a birdcatcher from the neighbourhood of Odessa. I do not find it recorded from Asia Minor; and Canon Tristram does not appear to have met with it in Palestine;

but it is stated to have occurred in North-east Africa; for Von Heuglin says that Hedenborg informed him that he obtained it in Egypt, and he himself procured it at Suez in August, and believes that he saw small flocks of this species at Ras-Belul, on the African coast of the Red Sea. In the collection of Mr. J. E. Harting there is, I may add, a specimen said to have been obtained in Egypt. Loche includes it in his work on the avifauna of Algeria as an accidental visitant; but he cites no instance of its occurrence, and it appears doubtful if it has really been obtained there.

To the eastward it is certainly met with as far as India. Mr. Blanford obtained it on the Mekran coast, and Mr. A. O. Hume in Baluchistan. The latter gentleman writes (*Stray Feathers*, i. p. 244) as follows:—"This species was very common in the Kurrachee harbour, and along the Mekran and Sindh coasts. Dr. Jerdon says that the Broad-billed Stint is tolerably common towards the north of India, rare in the south. To the best of my belief it is exclusively with us a maritime species. No ornithologist probably has been so much about the great rivers of Upper India as I have; and I never once saw a specimen in the Central Provinces, Oudh, Behar, the North-western Provinces, Rajpootana, the Punjab, or Sindh above Kotree; nor have I ever met with a specimen in any of the very numerous collections made in these provinces which I have examined." Again (*op. cit.* ii. p. 298), he writes:—"I never met with this species on any of the islands of the Bay of Bengal; and it must, I think, be rare. Davison says, 'I only met with a few of these birds at the Andamans; they were associating with a small flock of *T. minuta*. I did not observe them at the Nicobars.'"

Dr. Severtzoff does not record it from Turkestan; and in China and Siberia it is replaced by a distinct species, differing in summer plumage in having the upper parts rufous, as in *Tringa minuta*. This bird I exhibited at the meeting of the Zoological Society on the 20th June, 1876, and described under the name of *Limicola sibirica*. I have examined a specimen of this eastern species said to have been obtained somewhere in India. Nuttall says that the Broad-billed Sandpiper occurs rarely in the United States of North America; but this statement has not been confirmed by later authors and may reasonably be doubted.

In habits the present species does not differ much from its allies, except that at all seasons of the year it is found on the borders of fresh water or in marshes, and not on the sea-coast. Nor is it met with during passage in large flocks, but only singly or in small parties.

I have only on one occasion had an opportunity of watching this Sandpiper in a wild state. I was collecting on the small islands just off the coast of Uleåborg, in Finland, in June 1861, with a couple of friends, lads home from school; and when busy watching a pair of Temminck's Stints, who had a nest on the little island of Pyoskari, I saw a bird pass which appeared to me to be a Jack Snipe. It pitched not far off; and after watching it for a few minutes, and not being able to make out what it was, I was going to flush it, when it rose; and crossing near Franz, one of my companions, he at once dropped it, and it proved to be a female of the present species. We saw another, and I thought they must have a nest near; but we could not find it. So far as I can gather, the present species is much more of an inland Wader than a frequenter of the sea-coast, and even during passage it is more frequently met with on the shores of inland lakes and ponds than on the sea-coast. In its flight it reminds one much of the Jack Snipe; but when

walking or standing on the ground it differs somewhat in its general attitude from that bird. I have never heard its note, and do not find any reliable information as to what its note is.

As regards its breeding-habits, I am indebted to Professor Newton for the loan of the letter from the late Mr. John Wolley to Mr. Hewitson, in which he gives the details from which Mr. Hewitson selected the notes published by him on the nidification of this species. Writing from Muoniovara, in Lapland, Mr. Wolley says:—"The Broad-billed Sandpiper differs from other wading birds in the situation of its nest, choosing open soft places in the marsh where there is little else than bog-moss with a light growth of a kind of sedge; and on a low tuft just rising above the water its nest may be found, often without much difficulty. If the bird is not seen to leave, it will at all events be heard in the air making a kind of faint twittering noise; and when once it is discovered a careful search of the neighbourhood it frequents with plenty of beaters seldom fails of success. But it must not be supposed that this kind of bird-nesting is very easy work. The marshes where the Broad-billed Sandpiper is to be found are few and far between; they are soft and full of water; and often every step is a struggle, whilst the swarms of hungry gnats require almost individual attention. Satisfactory food is not easy to get; whilst eating and having to expose one's face to the attacks of the insects is necessary, though extremely provoking. The sun is scorching at midday; but at midnight it has not enough power to keep away an unpleasant chill. The country to be gone over is of vast extent, the egg-season very short. Sleep is seldom attainable; a feverish feeling comes on, and present enjoyment soon ceases; but one works away with a conviction that the greater the difficulty the greater will be the satisfaction in success. It is just when the thickest cloud of gnats rise from the water which is so generally spread over the recently thawed land that the Broad-billed Sandpiper has its eggs; and this is just before midsummer, about the third week in June. Many empty nests are found for one that is occupied; and I suppose them to be nests of former years; for the moss in which they are usually worked long retains any mark made in it, being hard-frozen for more than half the year. They are neatly rounded hollows, and have a few bits of dry grass at the bottom. The bird sometimes flies and sometimes runs off her eggs; and if she has sat for a day or two she will come back even whilst men are standing all around. The eggs are usually very deeply and richly coloured when fresh, but they fade sadly soon after they are blown."

Mr. J. A. Harvie-Brown sends me the following note respecting the nidification of the present species in Norway:—"Mr. Mitchell, who visited the Dovrefjeld, in Norway, in 1873, accompanied by our collector, Herr O. J. Lysne, kindly presented me on his return with a set of four eggs of the Broad-billed Sandpiper, along with the following notes, under date of 10th July, 1873:—"The Broadbill's eggs were taken near Fokstuen, on the Dovrefjeld, on the 15th May, in an open part of the marsh. It is rather curious to notice how the lining of the nest is suited to the colour of the egg. The darkest ones are laid on the brown withered leaves of the mountain-willow, while one nest, the eggs of which were as light as Dunlins', was lined entirely with grass; several others were mixed. . . . The nests are more elaborate than most of the Sandpipers', scratched deeper down, and more carefully lined. The old bird sits so closely that she never gets off until your foot is nearly upon her.' Prior to our visit to the Fille Fyeld in 1871, Mr. Alston and myself had heard of the nesting of this species upon the edge of a lake in Valdres. We had no opportunity of visiting this locality ourselves; but Herr Dr. Printz, of

Slidre, who was present when they were found on a former occasion (in 1861), and who visited it again on our behalf, did not find any trace of them in 1871."

Of the eggs of the present species I possess a series of nearly thirty specimens, all obtained in Lapland, which vary considerably. The ground-colour is stone-buff, in some darker, in others lighter; and the markings consist of faint purplish grey underlying shell-spots, which are very sparingly distributed, and rich dark umber-brown or reddish umber surface-spots and blotches. In some these markings are not very profuse, whereas in others they are very closely scattered over the surface of the shell, one or two of the eggs appearing at the first glance to be almost uniform dark coffee-brown. In size they vary from  $1\frac{9}{40}$  by  $\frac{34}{40}$  inch to  $1\frac{10}{40}$  by  $\frac{37}{40}$ , and are pear-shaped, like the eggs of most of the Waders.

The specimens figured are the adult bird in full breeding-dress and the young bird in down above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♀. Fokstuen, Dovre, Norway, June 9th, 1872 (*R. Collett*). *b*, ♀. Öland, May 24th, 1869 (*Meves*). *c*, ♀. Öland, June 9th, 1869 (*Meves*). *d*, ♀. Uleåborg, Finland, June 12th, 1861 (*H. E. D.*). *e*, pull. Muonioniska, July 1872 (*Meves*).

*E Mus. Cantab.*

*a*. Lombola, Muonioniska, June 17th (*Knobloch*). *b*, *c*. Isouoma, Lapland, August 1855 (*J. Wolley*). *d*, ♀. Pomerania. *e*, *f*, *g*. India (*Jerdon*).

*E Mus. J. E. Harting.*

*a*, ♀. Gothenburg, Sweden, July 22nd, 1863 (*R. Duff*). *b*, ♂. Gothenburg, June 1867 (*R. Duff*). *c*, ♂, *d*, ♀. Quickjock, Lapland, June 1862 (*Wheelwright*). *e*, ♀. Quickjock, September 1866 (*T. E. Buckley*). *f*. Egypt, winter. *g*, ♀. Kurrachee, Sindh, January 9th, 1875 (*W. T. Blanford*). *h*, ad. (winter plumage). India (*Bartlett*).

*E Mus. R. Swinhoe.*

*a*, ad. (winter plumage). India (*Blyth*).

*E Mus. Howard Saunders.*

*a*, ♂ ad. Öland, May 16th, 1869 (*Meves*). *b*, *c*. Kurrachee, Sindh, winter 1873-74 (*W. B. Mulock*).

## Genus TRINGA.

- Tringa*, Brisson, Orn. v. p. 177 (1760).  
*Scolopax* apud Brisson, tom. cit. p. 309 (1760).  
*Tringa*, Linnæus, Syst. Nat. i. p. 247 (1766).  
*Numenius* apud Latham, Ind. Orn. ii. p. 712 (1790).  
*Erolia* apud Vieillot, Analyse, p. 55 (1816).  
*Pelidna* apud Cuvier, Règne Anim. i. p. 490 (1817).  
*Calidris* apud Cuvier, tom. cit. p. 489 (1817).  
*Falcinellus* apud Cuvier, tom. cit. p. 486 (1817).  
*Totanus* apud Stephens in Shaw's Gen. Zool. xii. p. 146 (1824).  
*Leimonites* apud Kaup, Natürl. Syst. p. 37 (1829).  
*Ancylocheilus* apud Kaup, op. cit. p. 50 (1829).  
*Actodromas* apud Kaup, op. cit. p. 55 (1829).  
*Canutus* apud C. L. Brehm, Vög. Deutschl. p. 654 (1831).  
*Schoeniclus* apud Gray, Cat. Brit. Mus. Grallæ, p. 106 (1844).  
*Arquatella* apud Baird, B. of N. Am. p. 717 (1858).  
*Heteropygia* apud Coues, Proc. Phil. Acad. 1861, p. 199.  
*Limnocinclus* apud Gould, Handb. B. of Australia, ii. p. 254 (1865).

THIS genus is represented in the Palæarctic, Ethiopian, Oriental, Australian, Nearctic, and Neotropical Regions, nine species being found in the Western Palæarctic Region. They frequent muddy and damp localities, both inland and on the sea-coast, some species being especially partial to the latter. They walk and run with ease, some being very nimble on foot; and one may often see them following the receding waves picking up food, and running back to avoid the water as it returns. Almost all the species wade in search of food, and are able, in case of need, to swim. They fly with rapidity, and are almost all strong on the wing, frequently traversing considerable distances. They are to a considerable extent gregarious, and associate in large flocks both with other species and with other individuals of their own species. Their note, usually uttered when the bird is flying, is a clear whistle. They are dispersed over the more boreal regions of the globe during the breeding-season, and migrate south at the approach of winter. Their nests are mere depressions in the ground scantily lined with grass-bents; and their eggs, four in number, are pyriform in shape, and greenish grey, greenish buff, or dull dark buff in colour, blotched and spotted with different shades of brown. These birds feed on insects, worms, minute shell-fish, &c., and collect their food either on the shores of lakes and rivers or on the sea-coast; or else they obtain it in marshy places, frequently by probing the soft soil.

*Tringa canutus*, the type of the genus, has the bill rather longer than the head, straight, rather higher than broad at the base, rather soft and flexible; the nasal groove extending nearly to the tip, which is slightly enlarged and obtuse; nostrils basal, linear, rather small; wings long, pointed, the first quill longest; tail short, nearly even or slightly emarginate; legs moderately long, slender, the tibia bare on the lower part; tarsus scutellate; toes moderate, the hind toe small; claws rather small, moderately slender, curved, obtuse.







W. H. S. S. Lith.

Hanhart imp.

PECTORAL SANDPIPER.  
TRINGA MACULATA.

## TRINGA MACULATA.

(PECTORAL SANDPIPER.)

*Tringa cinclus dominicensis*, Briss. Orn. v. p. 219 (1760).*Tringa maculata*, Vieill. Nouv. Dict. xxxiv. p. 465 (1819).*Tringa pectoralis*, Say in Long's Exp. i. p. 171 (1823).*Pelidna pectoralis* (Say), Bp. Comp. List, p. 50 (1838).*Tringa dominicensis*, Degl. Orn. Eur. ii. p. 232 (1849).*Pelidna maculata* (Vieill.), Bp. Compt. Rend. xliii. p. 596 (1856).*Actodromas maculata* (Vieill.), Coues, Proc. Phil. Acad. 1861, p. 197.*Tringa (Limnocinclus) maculata* (Vieill.), Gray, Hand-l. of B. iii. p. 49. no. 10303 (1871).*Figuræ notabiles.*

Audubon, B. Am. pl. 329; Gould, B. of Eur. pl. 327; id. B. of G. Brit. iv. pl. 67.

*Ad. ptil. æst.* pileo et corpore nigro-fuscis, plumis cinereo et ochraceo-cervino marginatis: uropygio nigro: rectricibus centralibus nigricantibus ochraceo-fusco marginatis, reliquis fusco-cinereis albo apicatis: remigibus nigricantibus, extimo rhachi albâ, secundariis intimis dorso concoloribus: tectricibus alarum nigricanti-cinereis, pallidè cinereo marginatis: mento albo: capitis lateribus, gulâ et pectore griseo-albis, conspicuè nigro-fusco striatis et notatis: corpore reliquo subtùs albo, hypochondriis vix cervino tinctis et fusco striatis: rostro viridi-nigro, ad basin pallidè olivaceo: pedibus ochraceis: iride fuscâ.

*Ptil. hiem.* corpore suprâ magis ochraceo et rufescenti notato: gutture et pectore pallidè griseis, indistinctè fusco striatis.

*Adult in spring* (Wisconsin, 28th May). Crown and upper parts generally blackish brown, the feathers broadly margined with dusty greyish buff and ochreous buff; rump blackish; central rectrices blackish, narrowly edged with ochreous brown, outer rectrices dusty cinereous, tipped with white; quills blackish, the shaft of the first quill white, elongated inner secondaries like the back; wing-coverts blackish grey, margined with light grey; chin white; sides of the head, neck, and upper breast greyish white, clearly striped with blackish brown, the base of the feathers dark brown; rest of the underparts white, the flanks slightly washed with buff, and striped with blackish brown; bill greenish black, light olive-green at the base; legs clay-yellow; iris dark brown. Total length about 8·5 inches, culmen 1·2, wing 5·0, tail 2·3, tarsus 1·1.

*Adult in autumn* (Washington, 23rd September). Differs from the spring dress in having the feathers on the upper parts margined here and there with rufous, and those on the throat and breast much whiter, with rather indistinct blackish brown stripes.

ALTHOUGH this Sandpiper is essentially a New-World species, it has occurred so often in Great Britain that it cannot be excluded from the list of European birds, though it is only known as a rare straggler, its true home being America. Yarrell (3rd ed. iii. pp. 82, 83) cites the following

occurrences in Great Britain, viz.:—One on Breydon Broad, Norfolk, on the 17th October 1830; one shot and one seen on Annet, one of the Scilly Islands, on the 27th May 1840; one near Hartlepool in October 1841; one near Yarmouth in September 1853; and one near Whitley, Northumberland, in June 1855. Mr. J. E. Harting cites altogether, inclusive of the above (Handb. Brit. B. pp. 140, 141) sixteen instances of this Wader's occurrence in Great Britain; but though it is possible that one or two of these may be based on an erroneous identification, still there is reason enough to include it as a rare straggler. So far as I can ascertain, however, it has not been known to occur elsewhere in Europe. It has been met with in Greenland; for Professor Reinhardt states (*Ibis*, 1861, p. 11) that a specimen was sent from there in 1851, and two more from Nenortalik in 1859.

In America it is widely distributed, and it is stated by Professor Kümlein to breed in Wisconsin; but I do not find any detailed notes on its nidification, nor have I been able to obtain its eggs. Professor Baird says that it is of frequent occurrence on the Atlantic coasts of the United States. In the winter it ranges far south; I met with it in Texas and Mexico; and it has been recorded from South America as far down as Brazil and Peru. Lawrence records it from Peru; and Mr. Salvin, who obtained it at Dueñas, in Guatemala, writes (*Ibis*, 1859, p. 229) as follows:—"About the beginning of April, and towards the end of the dry season, a great part of the stream is diverted from the river Guacalate, and thrown on the open pasture-land near Dueñas. During this period numbers of *Scolopacidæ* frequent the inundated part, of which *Tringa maculata* is the most abundant. At this season this bird, taking its food from fresh water, proves excellent eating." Dr. Sclater records it from Ecuador, and I have examined specimens from Bolivia, Chili, Eastern Peru, and Brazil.

It occurs also in the West Indies. Bryant states that it has been found in the Bahamas; Gundlach (*J. f. O.* 1856, p. 421) says that it is found in Cuba from September to April, but is not very plentiful; and Messrs. A. and E. Newton, who met with it in the island of St. Croix, write (*Ibis*, 1859, p. 258) that they met with it occasionally after September 14th, 1858, and obtained some examples, but never saw more than two in company.

The Pectoral Sandpiper does not appear so gregarious as its allies; at least I never met with it otherwise than singly or in pairs, and other observers say the same. It is a rather shy bird, flying swiftly away when disturbed, much in the manner of the common Snipe, uttering a sharp note. I usually found it near grassy places inland where there were small pools, and not on the coast. Dr. Coues, writing respecting this Sandpiper, gives the following particulars of its habits (*B. of N. W.* p. 486):—"The Pectoral Sandpiper is well known to sportsmen and others, and is frequently sought after, as its somewhat game-like habits of lying to a dog and flushing correctly from the grass, like a true Snipe, render it an attractive object of pursuit; besides which, in the fall it becomes very fat, and it is then excellent eating. Unlike most Sandpipers, it does not flock, at least to any extent, being oftenest found scattered singly or in pairs. In the United States it is chiefly, if not wholly, a bird of passage; for though some may winter along our southern border and others breed along the northern tier of States, such probabilities require to be confirmed. Its winter range is very extensive; yet some individuals may be found in the Middle States as late as November. I found it in July along the forty-ninth parallel, where it probably breeds, though I did not ascertain the fact. It occurred sparingly about pools on

Turtle Mountain, in company with *T. minutilla*. It is a very abundant bird in summer in Labrador, where it frequents low muddy flats laid bare by the tide, and the salt marshes adjoining. When they arise from the grass to alight again at a little distance, they fly in silence or with a single tweet, holding the wings deeply incurved; but when suddenly startled and much alarmed, they spring quickly, with loud, repeated cries, and make off in a zigzag, much like the common Snipe. Sometimes, gaining a considerable elevation, they circle for several minutes in silence overhead, flying with great velocity, perhaps to pitch down again nearly perpendicularly to the same spot they sprang from. The southward migration begins in August, and is usually completed by the following month."

This Sandpiper, like its allies, feeds chiefly on small aquatic insects, and, when it frequents the sea-shore, on sea-weed. Nuttall says that it feeds on "small coleoptera, larvæ, and the common green *Ulva latissima*, as well as some species of *Fucus*, or sea-weed, on which they become very fat. They utter a low plaintive whistle when started, very similar to that of some other species. Like the Snipe they seem fond of damp meadows and marshes."

As regards the breeding-habits of this bird I have been unable to obtain any reliable information, nor have I ever seen any authentic eggs.

The specimen figured is an adult male, in full spring dress, shot by myself in Texas.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

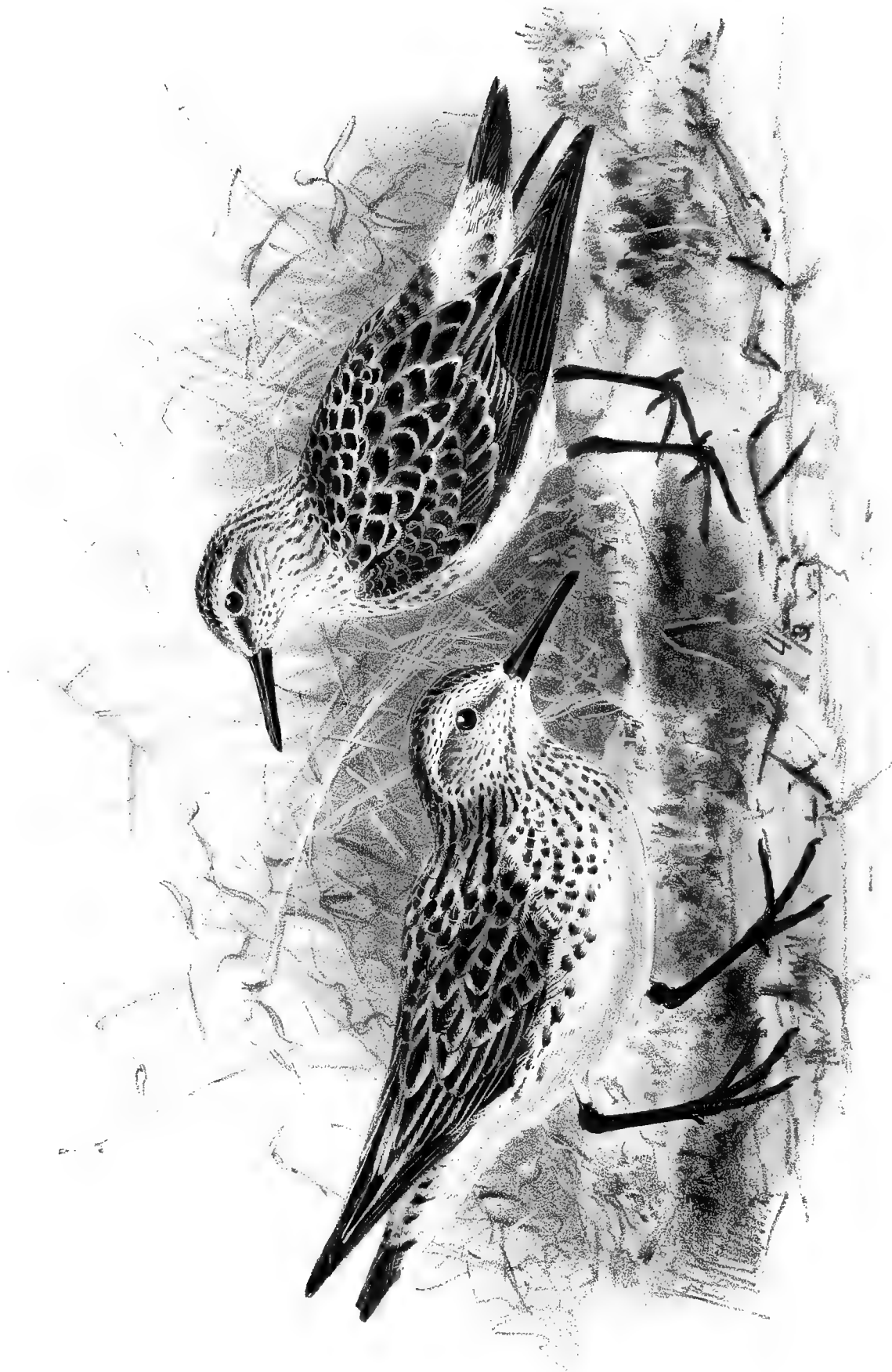
*a*, ♂, *b*, ♂. Washington, D.C., September 23rd, 1859 (*Dr. E. Coues*). *c*, ♀. Wisconsin, May 28th, 1871 (*Dr. Brewer*). *d*. Pennsylvania. *e*, ♂, *f*, ♀. Howard's Rancho, Medina, Texas, May 2nd, 1864 (*H. E. D.*).

*E Mus. Salvin et Godman.*

*a*. Washington, D.C. (*Drexler*). *b*, ♀. Dueñas, Guatemala, August 12th, 1858. *c*, ♀. September 2nd, 1869 (*O. Salvin*). *d*. Lion Hill, Panama (*M'Leannan*). *e*, ♀. Pampas Argentinas, 1875 (*Leybold*). *f*. Santa Catharina, Brazil (*Rogers*). *g*, ♂. Cosnipata Valley, E. Peru, October 19th, 1868 (*H. Whitely*). *h*. Chili (*Reed*). *i*. Tilotilo, Prov. Yungas, Bolivia, 1876 (*C. Buckley*).







**BONAPARTES SANDPIPER**

*TRINGA FUSCICOLLIS*

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# TRINGA FUSCICOLLIS.

(BONAPARTE'S SANDPIPER.)

*Chorlito pestorejo pardo*, Azara, Apunt. iii. p. 322. no. 404, "Paraguay" (1785).

*Tringa fuscicollis*, Vieill. Nouv. Dict. xxxiv. p. 461 (ex Azara, 1819).

*Tringa compestris*?, Licht. Verz. Doub. p. 74, "Brazil, Montevideo" (1823).

*Pelidna cinclus*, var., Say, Long's Exp. R. Mts. i. p. 172 (1823).

*Tringa schinzii*, Bonap. Syn. U. S. Birds, p. 242 (1828, nec Brehm).

*Pelidna schinzii*, Bonap. Comp. & Geog. List, p. 50 (1838).

*Tringa bonapartii*, Schleg. Rev. Crit. Ois. Eur. p. 89 (1844).

*Tringa dorsalis*, Licht. Nom. Av. p. 92 (1854).

*Pelidna melanotos*, Bp. C. R. de l'Acad. des Sc. xliii. p. 596 (1856, nec Vieill.).

*Actodromus melanotos*, Bp. Rev. et Mag. de Zool. ix. p. 59 (1857).

*Actodromus bonapartii*, Coues, Proc. Philad. Acad. p. 199 (1861).

*White-rumped Sandpiper, Bonaparte's Sandpiper, Sandpeep, Grassbird, English.*

## *Figuræ notabiles.*

Bonap. Am. Orn. iv. pl. 24. f. 2; Aud. Orn. Biog. pl. 278, 8vo ed. pl. 335; Dekay, Zool. New York, pl. 84. f. 191; Gould, B. Eur. iv. pl. 330.

*Ad. æst.* suprâ grisescens, plumis medialiter nigris, ochrascente brunneo marginatis: capite suprâ nigro, plumis omnibus rufescente marginatis: supercilio cum genis albidis, vix brunneo maculatis: tectricibus alarum minimis saturatè brunneis, medianis et majoribus magis grisescentibus et vix albido marginatis: remigibus nigricanti-brunneis, in pogonio interno versùs basin grisescentibus et in pogonio externo indistinctè albido marginatis, rhachibus brunneis versùs apicem albidis: secundariis minoribus vix albido terminatis, secundariis intimis elongatis saturatè brunneis vix albicante brunneo marginatis: scapularibus nigricanti-brunneis, ochrascente rufo marginatis et terminatis: uropygio nigricante, plumis omnibus vix griseo apicatis: supracaudalibus albis, indistinctè brunneo notatis: caudâ saturatè griseâ, albido indistinctè terminatâ: subtùs albus: pectore nigricante brunneo maculato: gutture albo: hypochondriis nigricante brunneo maculatis: rostro nigro, versùs basin saturatè viridi: pedibus nigricanti-viridibus: iride nigrâ.

♀ *juv. autumn.* suprâ præcedenti similis, sed paullò saturatior: capite et collo grisescentioribus: dorsi plumis albido marginatis: subtùs alba: pectore summo pallidè grisescenti-brunneo, maculis paucis indistinctis brunneis notato.

*Ad. hiem.* suprâ griseo-brunnescens: plumis anteocularibus et regione paroticâ grisescenti-albidis: scapularibus dorso concoloribus: tectricibus alarum vix pallidiore marginatis: supracaudalibus albis immaculatis: subtùs albus, pectore summo pallidè fusco lavato et indistincte brunneo maculato.

*Adult Female in summer* (Koshkonong Lake, Wisconsin, 6th June). Upper parts grey, marked with black

and rufous buff; crown black, each feather margined with pale rufous; sides of the head and space above and before the eye white, spotted with blackish brown; nape washed with grey, and closely spotted with blackish brown; back and scapulars black, each feather margined with dull buff or pale rufous, scapulars tipped with dull buff; lesser and median wing-coverts brownish grey, edged with pale ashy brown; larger coverts brownish grey, slightly tipped with white; quills blackish brown, dull grey towards the base of the inner web, and narrowly margined with white on the outer web of the inner primaries; shaft of the first primary white, the remainder having the shafts brown at the base and white towards the tip; secondaries tipped with white; elongated inner secondaries blackish brown, margined with rufous buff; rump blackish, each feather narrowly tipped with dull grey; upper tail-coverts white, here and there spotted with blackish; tail pale ashy brown, imperceptibly tipped with dirty white, the two central feathers darker than the rest; underparts white; throat (except the upper part, which is pure white), chest, and flanks spotted with clearly defined small blackish brown spots; bill blackish dull green at the base; legs dusky greenish; iris blackish brown. Total length  $7\frac{1}{2}$  inches, culmen 1.1, wing 4.7, tail 1.8, tarsus 1, bare portion of tibia 0.55.

*Young in autumn* (Musquash, N.B., 28th October, 1862). Crown dull blackish, the feathers having dull fulvous margins; sides of the head and nape dull greyish, slightly marked with dark brown; back and scapulars similar to the adult summer plumage, but edged with white; wings as in the adult; upper tail-coverts white, almost unspotted; underparts white, on the chest and neck washed with greyish buff, and spotted with dull brown, the spots not being clearly defined; flanks washed with pale brownish buff; chin and upper part of the throat white.

*Adult in winter* (Kingsbury Reservoir, Middlesex, 1856). Upper parts dull greyish brown, imperceptibly marked with rather darker brown; scapulars and elongated inner secondaries similar to the rest of the upper parts; wing-coverts duller than in the summer plumage; tail-coverts pure white; tail rather paler than the summer plumage; underparts white, on the throat (excepting the upper part) and neck washed with greyish brown, and slightly marked with darker brown.

*Obs.* I can find no appreciable difference between the male and the female, except that in the breeding-plumage the latter is, if any thing, a trifle richer-coloured.

When writing the history of *Tringa minutella* a note from the pen of my friend Dr. Elliott Coues was inserted, in which he said that he could not state authoritatively that *Tringa fuscicollis*, Vieill., and that species are identical, but considered it against all probability that they should be distinct. Since then, however, I have, with the assistance of Mr. Osbert Salvin, been enabled to clear this question up; for after most carefully investigating the matter, we came to the conclusion that the *Chorlito pestorejo pardo* of Azara, on which Vieillot's *T. fuscicollis* is founded, is undoubtedly the present species; and I may here mention that Vieillot especially refers to the characteristic white upper tail-coverts. Lichtenstein, *l. c.*, describes a Sandpiper under the name of *Tringa campestris* from Brazil and Montevideo, which he identifies with the *Chorlito pestorejo pardo* of Azara; but, as his description is imperfect, I am unable to decide whether it really is the present species, or one of the other small American Sandpipers. He describes it as being less than the Dunlin, and having a much shorter beak, which would lead one to suppose that he refers to *Tringa bairdii*, or possibly *T. minutella*, rather than *T. fuscicollis*. Bonaparte, *l. c.*, and Degland and Gerbe (Orn. Eur. ii. p. 202) refer to the present species as *Pelidna melanotos* (Vieill.), which is certainly an error.

THE present species, again, is one of those American birds which, having on several occasions been killed in Europe, must be included in the present work as a straggler. It has been met

with on several occasions in this country, and, owing to its similarity to the Dunlin, may have been oftener killed and not recorded, having been mistaken for that species. Mr. J. E. Harting, in his 'Handbook of British Birds,' records fourteen specimens as having been obtained in Great Britain, viz.:—one at Stoke Heath, Shropshire; one in Ireland, now in the Belfast Museum; a pair at Hayle, Cornwall, 13th of October, 1846; one, Scilly, October 1854; one, Kingsbury, Middlesex, 1856; one, Bexhill, Sussex, 8th of October, 1857; two, Scilly, October 1870; four, Instowe, North Devon, November 1870; and one, Eastbourne, Sussex, 12th of November, 1870.

Respecting the four Devonshire birds to which Mr. Harting refers, Mr. Cecil Smith writes to me as follows:—"One of these stragglers from America was shot near Barnstaple on the 6th of November 1870, and left about on the counter of Mr. Rowe's shop (the Barnstaple bird-stuffer and gunmaker), and would have been thrown away; but luckily Mr. Horne of that place saw it, and told the gunmaker he had better send it to me. Accordingly that and one shot a few days later were sent to me in the flesh. Another, also shot about the same time, was sent to Mr. Mathew, our vicar. These three birds are now in our collections. A fourth was also shot on the Barnstaple river, but was thrown away, as not worth the trouble of stuffing. Mr. Mathew's bird and my two were in change of plumage, many of the rufous summer feathers still being intermixed with the dull grey ones of the winter plumage. In this state it much resembles a Purre shot about the same time of year, the white rump of course distinguishing it; the other most conspicuous distinctions at this time of year appear to me the entire absence of the black spots on the breast (which, as the remains of the summer plumage of the Purre, always appear at this time of year) and a slightly more distinct white eye-streak. These occurrences were duly recorded by me in the 'Zoologist' for 1870, as 'Schinz's' Sandpiper, under which name this bird is figured in former editions of Yarrell; his plate, however, in the third edition is undoubtedly 'Bonaparte's Sandpiper,' and not the bird now generally known as 'Schinz's.'"

It does not appear to have been recorded from any other part of Europe, as the bird referred to by continental authors under the name of *Tringa schinzii*, Brehm, which by some authors has been confused with the present species, is nothing but a small race of the Common Dunlin. This mistake, as Dr. Elliott Coues points out to me, appears to have originated with Bonaparte in 1828, this being the earliest notice of the American *Tringa schinzii*. In a letter lately received from Dr. Coues, in which he states that this Sandpiper is "abundant in North America," he writes as follows:—"I have studied this little bird in various remote sections of this country. In Kansas I found it migrating northward in May, and at that time assuming the richer summer livery in which it is rarely seen in the United States. It was in small flocks, rambling over the banks and bars of the Republican Fork of the Kansas river, and was then, as I have always found it, very gentle and unsuspecting. None of our little Sandpipers, however gregarious and sociable, pack closer together than this one. I fired into a flock of thirteen once, and picked up eleven of them. This occurrence of the species in the interior shows a line of migration different from that which the majority pursue, and which lies along the Atlantic coast; so also does Richardson's indication of its presence on the Saskatchewan. On the shores of North Carolina I found the birds abundant during the migrations, both vernal and autumnal, mixing indiscriminately with Dunlins, Stints, and the *Ereunetes*—sometimes on the sandy beach itself, but oftener in the muddy flats just back of the sand dunes. We have numerous quotations of its appearance

along the Atlantic coast, from Maine to Florida; and Lambrye gives it as a bird of Cuba (Aves, 1850, p. 98). I think it winters on our South Atlantic and Gulf States, but numbers undoubtedly penetrate still further southward. Of its breeding-range, nest, and eggs, I am entirely ignorant; but there is no reasonable question that it only breeds in the far north. It has not yet been observed, to my knowledge, anywhere west of the Rocky Mountains; nor did Mr. Dall notice it in Alaska, where, however, I anticipate its occurrence, since in that latitude the 'Eastern Province' of North America, to which the bird belongs, trends westward to the very shores of the Pacific.

"Whilst in Labrador, in 1860, I saw these birds daily during the month of August; and when I left the country, on the 1st of September, they were as numerous as ever. Audubon says that on his visit those he procured were shot in the beginning of August, and were all young birds, apparently about to take their departure. A note that I published in 1861, on the bird's manners, is as pertinent now as then. 'They were found in great abundance on the rocky shores of Labrador, covered with sea-weed and interspersed with muddy flats and shallow pools, in which last the birds wade quite up to the breast. I have also frequently seen them . . . on the large masses of rock sloping down abruptly to the water, green and slippery from the continual falling of the spray. They seem to be very fond of these locations; and I seldom passed one without seeing several of these "peeps" running nimbly about: and I have actually approached within three or four feet of them as they stood motionless regarding me with curious eye. Of all the Sandpipers, this is one of the most gentle and confiding; they seem utterly regardless of the presence of man, and do not always intermit their occupations though the observer may be standing within a few feet of them. When startled, they emit a low soft "*weet*," different from that of any other Sandpiper, and fly off in a very compact flock. If a part of them be killed, the gunner may often make equal havoc with his second barrel, as after a few circlings they fly past, or alight again on the same spot. They fly rapidly, in a rather unsteady manner, alternately showing the upper and under part; and they may always be recognized, in flight, by the conspicuously white upper tail-coverts. They usually associate with the Semipalmated Sandpipers and the Ring-Plovers (*Ægialite semipalmatus*), and, in common with other small species, are known by the general name of "peeps." Those that I shot were not so exceedingly fat as the *Actodromas maculata* and *Ereunetes pusillus* usually are at this season.'

"It hardly seems necessary, at this date, to criticise Dr. Schlegel's unquestionable error of uniting this species and *Tringa bairdii*; but that eminent ornithologist's authority deservedly carries such weight that when he is mistaken the fact of error cannot be too often or too strongly insisted upon. Mr. Cassin's notice (Baird's B. N. A. p. 722) is entirely correct; but among the specimens he there enumerates, Nos. 4869, 5442, and 8800 belong to *bairdii*. This fact, ascertained by my examination of the specimens in the preparation of my Monograph, carries the reference of '*Tringa bonapartii*' in Hayden's Report (Geol. & Nat. Hist. Mo. R. 1862, p. 174) to *bairdii*. Similarly the specimens representing '*Tringa schinzii*,' of Woodhouse (Sitgreave's Rep. 1853, p. 100), procured in New Mexico, and now in the Smithsonian, are, I find, *bairdii*. These two are the only instances of malapplication of the name '*bonapartii*' that I have found among American writings."

To what Dr. Coues writes I may add that the present species has been met with in Jamaica

(*Sclater*), in the Rio Tocantino, Lower Amazons (*Sclater and Salvin*); in Chili, where, Dr. Sclater writes, Mr. Bridges obtained specimens; and there are examples in the Leiden Museum, sent by Professor Philippi from near Santiago; and Messrs. Sclater and Salvin record it as a winter visitor to the Conchitas, whence they obtained four specimens. Captain C. C. Abbott, who obtained it in the Falkland Island, says that it appears there in the summer, and *breeds* (?) in East Falkland, where he saw the young ones, but never found the nest.

Professor Reinhardt, in his list of the birds of Greenland, includes *Tringa schinzii*, Bp., which may possibly be the present species, though I think it far more likely to be the small race of the Dunlin, to which reference is made above.

Though I obtained specimens in New Brunswick, it was a very rare species in that province; and I can add nothing respecting its habits to what Dr. Coues writes.

The breeding-habits of the present species are not known; and I have not been able to ascertain any definite information as to its eggs, which do not appear to exist in any collection in this country. Dr. E. Rey informs me that he has seen eggs from Labrador, and that he himself possesses one, said to be of this species, which closely resembles the egg of the Common Dunlin, both in coloration and markings, and in size measures 28.5 by 19.5 millimetres. He does not, however, give any particulars as to who obtained this egg, and I conclude that he obtained it through a dealer.

On the right-hand side of the Plate I have figured the bird in autumn plumage, and on the left side the old female in full breeding-dress. These are both in my own collection, and are the specimens described, the winter-plumaged bird described being also in my collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

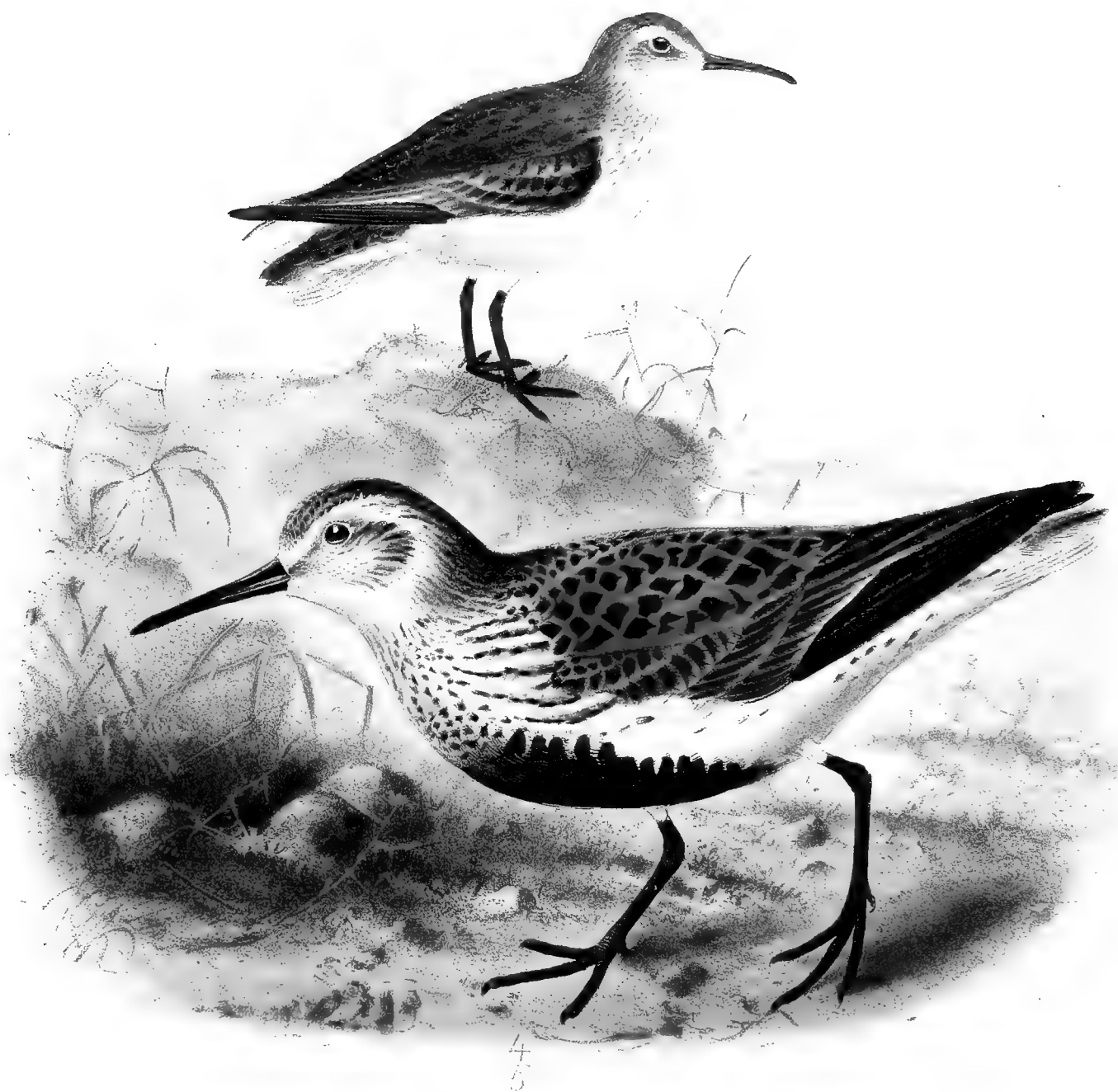
*a*, ♂, *b*, ♀. Koshkonong Lake, Wisconsin, U. S., June 6th, 1870 (*Dr. Brewer*). *c*, ♀. Republican Fork, Kansas, U. S., May 23rd, 1864 (*Dr. Coues*). *d*, ♂, *e*, ♀. Musquash Marshes, New Brunswick, October 27th, 1862 (*Arthur R. Dresser*). *f*, *ad.* Kingsbury Reservoir, Middlesex, 1856 (*Goodair*).

*E Mus. Salvin and Godman.*

*a*, ♀. Musquash Marshes, October 28th, 1862 (*A. R. Dresser*). *b*, ♀. Lion Hill, Panama (*McLeannan*). *c*, ♂. Ypanema, Brazil, November 12th (*Natterer*). *d*. Falkland Islands, winter plumage (*Leconte*).







DUNLIN.  
TRINGA ALPINA.

## TRINGA ALPINA.

(DUNLIN.)

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- Tringa cinclus*, Briss. Orn. v. p. 211, pl. 19. fig. 1 (1760).  
*Tringa cinclus torquatus*, Briss. tom. cit. p. 216, pl. 19. fig. 2 (1760).  
*Scolopax gallinago anglicana*, Briss. tom. cit. p. 309 (1760).  
*Tringa alpina*, Linn. Syst. Nat. i. p. 249 (1766).  
*Tringa cinclus*, Linn. tom. cit. p. 251 (1766).  
 ?*Tringa varia*, P. L. S. Müll. Natursyst. ii. p. 414 (1773).  
*La Brunette*, Buff. Hist. Nat. Ois. vii. p. 493 (1780).  
*L'Alouette de Mer*, Buff. tom. cit. p. 548 (1780).  
*Le Cincle*, Buff. tom. cit. p. 553 (1780).  
*Scolopax pusilla*, Gmel. Syst. Nat. i. p. 663 (1788, ex Briss.).  
*Numenius variabilis*, Bechst. Gemeinn. Naturg. Vög. Deutschl. iii. p. 141 (1809).  
*Tringa variabilis* (Bechst.), Meyer, Taschenb. deutsch. Vogelk. ii. p. 397 (1810).  
*Pelidna*, Cuv. (*Tringa cinclus*, L.), Règne Animal, i. p. 490 (1817).  
*Pelidna variabilis* (Bechst.), Steph. in Shaw's Gen. Zool. xii. p. 98 (1824).  
*Pelidna alpina* (L.), C. L. Brehm, Vög. Deutschl. p. 661 (1831).  
*Pelidna schinzii*, C. L. Brehm, op. cit. p. 663 (1831, nec Bp.).  
*Pelidna calidris*, C. L. Brehm, op. cit. p. 663 (1831).  
*Tringa* (*Pelidna*) *chinensis*, Gray, Zool. Misc. p. 2 (1831).  
*Pelidna cinclus* (L.), Bp. Comp. List, p. 50 (1838).  
*Tringa cinclus minor*, Schlegel, Rev. Crit. p. 89 (1844).  
*Tringa pygmæa*, Schinz, fide Schlegel, ut suprâ (1844).  
 ?*Pelidna melanothorax*, C. L. Brehm, Vogelfang, p. 317 (1855).  
*Pelidna americana*, C. L. Brehm, ut suprâ (1855).  
*Tringa* (*Schæniclus*) *alpina*, var. *americana*, Cass. in Baird's B. N. Am. p. 719 (1858).  
*Pelidna pacifica*, Coues, Pr. Phil. Acad. 1861, p. 189.  
*Tringa subarquata*, Swinhoe, Ibis, 1861, p. 342 (nec Güld.).  
*Tringa chinensis* (Gray), Swinhoe, Ibis, 1862, p. 255.  
*Tringa cinclus*, var. *chinensis*, Swinhoe, P. Z. S. 1871, p. 408.  
*Becasseau variable*, French; *Piovanello pancia nera*, Italian; *Beggazzina-ta-tis*, Maltese;  
*Alpen-Strandläufer*, *veränderlicher Strandläufer*, German; *Strandbockje*, Dutch; *Ryle-*  
*strandlöber*, Danish; *Graagrelingur*, Færoese; *Tojuk*, Greenlandic; *Louthræll*, Icelandic;  
*Foränderlig Strandvibe*, Norwegian; *Foränderlig Strandvipe*, Swedish; *Suo-sirriäinen*,  
 Finnish; *Pestrosoboy-pessotchnik*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 851, 852; Werner, Atlas, *Gralles*, pl. 9; Kjærbo. Orn. Dan. taf. 34;

Frisch, Vög. Deutschl. taf. 241; Fritsch, Vög. Eur. taf. 38. fig. 14, taf. 39. fig. 11; Naumann, Vög. Deutschl. tafs. 186, 187; Sundevall, Svensk. Fogl. pl. 43. figs. 1, 2; Gould, B. of Eur. pl. 329; id. B. of G. Brit. iv. pls. 69, 70; Audub. B. of Am. pl. 332; Wilson, Am. Orn. pl. 56. fig. 2.

♂ *ad. ptil. æst.* pileo nigro, rufescenti-ochraceo et ochraceo-cinereo notato: nuchâ, collo postico et colli lateribus albis nigro-fusco striatis: dorso et scapularibus nigris, marginibus plumarum ferrugineis: uropygio et supracaudalibus nigris vix cinereo marginatis: remigibus nigro-cinereis, scapis albis: tectricibus alarum pallidioribus et pallidè cinereo marginatis: caudâ cinereâ, rectricibus binis centralibus longioribus acuminatis, nigro-cinereis: subtus albus, gutture et pectore superiore nigro-fusco striatis, pectore imo et abdomine superiore nigris: rostro et pedibus nigris: iride fuscâ.

♀ *ad.* mari similis sed major, corpore suprâ magis ferrugineo notato, uropygio et supracaudalibus griseo-  
tioribus et plagâ nigrâ in corpore subtus minore.

*Ad. ptil. hiem.* pileo, nuchâ, dorso et scapularibus cinereis indistinctè brunneo tinctis, plumis centraliter nigro-fuscis: uropygio nigro, plumis conspicuè cinereo marginatis: supracaudalibus nigris, vix cinereo marginatis: alis et caudâ ut in ptilosi æstivali sed clarioribus: corpore subtus albo, gutture vix griseo-fusco striato: colli lateribus griseo-albis, pallidè fusco-striatis.

*Adult Male in summer* (Pagham, 11th July). Crown black varied with rusty yellow and yellowish grey; a light stripe passes over the eye; nape, hind neck, and sides of the neck white streaked with blackish grey; back and scapulars deep black, the feathers more or less broadly margined with rust-red or rusty yellowish; rump and upper tail-coverts black, with narrow greyish margins; quills blackish grey, the shafts white; the wing-coverts paler and with light-ashy margins; the central rectrices rather elongated beyond the rest, the remaining tail-feathers dull ashy grey; chin white; throat and upper breast white with broad black stripes and dashes, a broad black patch covers the lower breast, extending down onto the abdomen; rest of the underparts white; bill and legs black; iris dark brown. Total length about 7.5 inches, culmen 1.3, wing 4.4, tail 2.0, tarsus 1.0.

*Adult Female* (Öland, 25th July). Differs from the male in being somewhat larger in size, the upper parts are more varied with rufous, the rump and upper tail-coverts are greyer, the throat is marked with rather narrower streaks. In the present specimen the patch on the breast is fully as large and as black as in any of the other males I possess; but, as a rule, it is rather smaller in the female than in the male. Culmen 1.5, wing 4.55, tail 2.1, tarsus 1.0.

*Adult in winter* (Pagham, 12th February). Crown, neck, back, and scapulars ashy grey with a faint brownish tinge, most of the feathers with darker centres; rump blackish, the feathers broadly margined with ashy grey; upper tail-coverts black with very narrow greyish edgings; wings and tail as in the summer dress, but clearer-coloured; underparts white, on the lower throat slightly striated with dark brownish grey; sides of the neck greyish white striated with brownish.

*Young of the year* (Rye, Sussex, 8th September). Crown blackish brown slightly varied with rufous, becoming dull reddish brown on the sides; hind neck and sides of the neck and face brownish buff with dull blackish streaks; back and scapulars blackish, the feathers margined with dull rufous and yellowish white, the scapulars more broadly edged with the latter colour; wings as in the adult, but duller, the wing-coverts tinged with brown and edged with warm buff; tail as in the adult; throat and upper

breast buffy greyish with a faint brownish tinge, striped with blackish; rest of the underparts white, the flanks irregularly spotted or blotched with black.

*Young in down.* Covered with rather close down; crown velvety black, this colour narrowing to a point on the forehead, and margined all round with buffy white; hind crown slightly spotted with white; upper parts deep black slightly varied with rufous, and dotted here and there with white; sides of the head white with a warm buffy tinge; a dark streak passes from the base of the bill over the eye, and another below it, and behind the eye there is a dark patch; rest of the underparts greyish white.

*Obs.* Professor Schlegel, in his excellent article on the present species in the 'Mus. Pays-Bas,' gives most elaborate details of measurements of specimens from various localities in the Palæarctic and Nearctic Regions, clearly showing that they all belong to one species; and in this view I fully coincide, and may add that in the series of British examples in my collection I find the greatest variation in size, and can match examples from both America and Asia to a nicety with one or the other of these specimens. I do not, however, think it necessary to give a table of measurements, but may mention that the largest of my British-killed specimens measures—culmen 1.52, wing 4.62, tail 2.2, tarsus 1.0; and the smallest—culmen 1.18, wing 4.1, tail 1.8, tarsus 0.9.

THE range of the present species is very extensive; for it is found throughout the northern and central portions of Europe, Asia, and America during the summer season, wintering there also to a large extent; and during the cold season of the year it is found in North Africa, India, and the Southern States of North America.

With us in Great Britain it is a common bird on the coasts, especially during the seasons of passage. It is also found during winter; and in Scotland especially many remain to breed. Mr. A. G. More remarks that it is said to have bred in Devonshire, Pembrokeshire, and Cheshire; but he adds that he has not been able to obtain any corroborative information, and that further data are desirable. In Scotland it certainly breeds in considerable numbers; and Mr. Robert Gray writes:—"In the west of Scotland it is found breeding in almost every moorland and marshy tract where the Snipe or Golden Plover is met with. It is extremely abundant in North Uist, Benbecula, and South Uist, and, indeed, over the whole of the Outer Hebrides. It also breeds on St. Kilda and the Monach isles. On the inner islands it is equally plentiful, while on many parts of the mainland it is never absent. Mr. Alston has found it breeding in the Upper Ward of Lanarkshire, at an elevation of one thousand feet above the sea-level; and I have taken the bird and eggs on several occasions on the Renfrewshire hills, within eight or ten miles of Glasgow, and within full view of the city."

Mr. J. A. Harvie-Brown says that it is found breeding only in one locality in Assynt. Mr. Crawford informed him that it breeds near Tongue; but Sir William Milner does not mention it in his list of birds observed in Sutherland. In Orkney and Shetland it is said to be very common during the breeding-season; but the major portion of those which breed or have been hatched there migrate southward, leaving but a small proportion there during the winter. In Ireland, on the other hand, it is numerous on the coasts during passage and in winter; but comparatively few remain there during the nesting-season.

Professor Newton says that Dr. Paulson has more than once received the present species from Greenland, both in young and autumn plumage. It probably breeds there, as it certainly

does on Melville Peninsula and elsewhere on the coast of Davis Strait. In Iceland it is stated to be not so numerous as the Purple Sandpiper; and Faber says that it appears there only from the middle of April to the end of October.

Captain Feilden says that it is common in spring in the Færoes, but not nearly so numerous during the breeding-season as in the Outer Hebrides. He did not find its nest in the Færoes, though he searched diligently for it in places where the birds were evidently breeding. In Scandinavia it is a common bird during the summer season. Mr. Collett informs me that in Norway it is the most widely distributed of the waders, and breeds numerous above the arctic circle, more sparingly along the coast down to Lindesnæs in open places, and is especially numerous on the Jæderen. On the lowlands in the eastern portion of the interior it is not found; but it breeds on the fells in the birch-region, though not so commonly as in the north. During passage it is common all along the coast, and very numerous in some localities, as for instance on Jæderen, which appears to be a regular rendezvous for all the northern waders and water-birds, which migrate in autumn. In winter the present species does not occur. In Sweden it is, Professor Nilsson says, extremely common, arriving in Southern Sweden late in March in flocks, and leaving late in September or early in October. It is during the breeding-season very generally distributed throughout the country up into Lapland. In Finland, Dr. Palmén says, it breeds only in the northern portion of the country, and is observed elsewhere during passage, remaining, however, in some parts until the ice commences to form. Grape met with it at Enontekis; and Malm says that it breeds sparingly in the more elevated fell-morasses throughout Northern Lapland. In Russia it ranges far north. Von Heuglin met with it at Waigats and Ingorsky Shar during his trip to Novaya Zemlya; and Messrs. Seeböhm and Harvie-Brown found it breeding on the Petchora. It is common near Archangel in summer; and in Central Russia it is, Mr. Sabanäeff informs me, very numerous on passage. He met with it in the summer in the Ekaterinburg Government, and believes that it breeds throughout the Perm Government. According to Teplouhoff it is said to breed on the Obva river. On the coasts of North Germany and the Baltic provinces it is common during the summer, but breeds regularly, Borggreve says, scarcely anywhere inland, though it is often seen during passage both inland and on the coast in vast numbers. Mr. Benzon informs me that it is very common in Denmark in places where the coast is flat and where there is short grass, as it prefers such places for the purpose of nidification. It arrives there in April, and leaves in October; but the time of its departure varies according to the weather, and during mild seasons some remain over the winter. Whether the small race (*Tringa schinzii*, Br.) occurs in Denmark he is unable to say; but Mr. Fischer told him that he had met with it at the Lunfjord. Its common Danish names are *Rijle*, *Almindelig Rijle*, *Strandrijle*; in some parts of Jutland it is called *Prijllemand*, and in Sylt *Ternek*.

It occurs in Holland during passage, and is also met with at those seasons on the coasts of Belgium and France, being met with as a straggler on inland waters. It is recorded from Portugal by Professor Barboza du Bocage; and Dr. E. Rey says (J. f. O. 1872, p. 154) that he met with it not uncommonly at Lagos on the 1st April, most of those he saw being in change of plumage. In Spain it is principally found from autumn to early spring; but Mr. Howard Saunders has an egg from a clutch of four, off which the bird was shot by Mr. A. Chapman in

the marisma below Jerez de la Frontera, by far the most southern known breeding-place of the species. Colonel Irby says (Orn. Str. Gibr. p. 173) that "it is to be seen throughout the winter near Gibraltar, sometimes in considerable numbers, and occasionally they wander far up the rivers some distance from the sea, especially in the spring."

At the two seasons of passage it is seen in the valleys of Savoy, and visits Italy in irregular numbers. About Venice it is somewhat abundant, and remains during the greater part of the year; and Mr. A. B. Brooke says that it is common on the shores of the lagoons in Sardinia in winter. Mr. C. A. Wright says (Ibis, 1864, p. 148) that in Malta it is common in spring and autumn, arriving earlier in the spring than *T. subarquata*; and on its return in autumn it is seen till November. Lord Lilford states that it occurs sparingly in Epirus, and on the islands in winter; and Dr. Krüper informs me that it is common in Greece on passage. In Southern Germany it occurs on inland waters during passage. Dr. A. Fritsch says that it is met with on the muddy shores of lakes in Bohemia, singly in spring and in larger flocks in the autumn; and in Transylvania, Messrs. Danford and Harvie-Brown state (Ibis, 1875, p. 422), it is "not common, but to be met with during most years, especially in autumn. Herr Buda Ádám has shot several at Réa in spring and autumn." It is common on the coasts of the Black Sea in spring and autumn; and Professor von Nordmann states that it remains in the Crimea until November, but does not winter there. I have no data respecting its occurrence in Asia Minor; but Canon Tristram obtained it in Palestine, and it is found throughout a large portion of Africa. Von Heuglin says that it is "found in the autumn and winter in families and flocks on the north coast of Egypt, and on the shores of the Red Sea and the Gulf of Aden, and in rather less numbers on the Nile, southwards to Nubia, Sennaar, and Kordofan." On the 15th May he still met with a few stragglers on the Tana lake, in Abyssinia, and in July and August in small flocks at Suez and Sauakin; and he thinks it possible that a few stragglers are found throughout the summer in North-east Africa. On the north-west side it is also tolerably common in winter and on passage. Canon Tristram found it numerous on the shores of the salt lakes in winter; Mr. C. F. Tyrwhitt-Drake met with it commonly on the shore at Tangier in January, but hardly any remained by the middle of February; and Favier states (*vide* Colonel Irby, *l. c.*) that it "passes to Europe from the Moorish coast during the months of April, May, and June, returning to winter further south in October and November." It is not recorded from South Africa; but Captain Sperling states (Ibis, 1868, p. 292) that it occurs at Mozambique, Zanzibar, and probably on the intermediate coast. It is also found on the Canaries; and Webb and Berthelot say that it inhabits all these islands. Mr. F. DuCane Godman did not personally observe it there, and says that, though a constant visitor, it is probably not resident.

To the eastward it is found as far as China and Japan. De Filippi found it numerous at Enzeli, on the Caspian, in the beginning of September; and Mr. Blanford informs me that he found it common on the coasts of Baluchistán in winter. Dr. Jerdon says of it (B. of India, ii. p. 690):—"A somewhat rare visitant to India, and I have not seen it in the south. It is occasionally brought to the Calcutta market. It is an inhabitant of both continents, breeding in the north." Dr. Severtzoff records it as occurring in Turkestan during passage; and it was met with in Siberia by the Russian travellers. Von Middendorff says that on the 4th June (O. S.) the present species arrived on the Taimyr river, in 74° N. lat., and on the 24th May on the

Boganida, in 70° N. lat. It remained on the Taimyr until the 15th August; but on the 11th of that month they had commenced to collect in flocks. He observed a pair in the Stanowoi Mountains on the 16th May; and on the 11th August the first flocks appeared on the south coast of the Sea of Ochotsk. Von Schrenck obtained the first specimen in the spring of 1855 on the 14th (26th) May at the mouth of the Amoor; and in the autumn of 1854 they appeared very early, the first being seen at the Nikolaieffsk post on the 16th (28th) August. Dr. Radde does not appear to have met with it. Mr. Swinhoe states that it is found on the Chinese and Formosan shores in winter, coming early and retiring late; and it also occurs in Japan. Mr. H. Whitely says (*Ibis*, 1867, p. 205), "Two specimens obtained:—one in November 1864 of a native bird-catcher; the other shot by Captain Blakiston, January 26th, 1865, during a trip we made to Nannyabama, a small village about six miles round the bay from Hakodadi. It was quite alone." It ranges southward to Borneo and Java, whence there are examples in the Leiden Museum. In America it is found throughout the United States in suitable localities during passage and in winter, but breeds only in the high north. Richardson (*Faun. Bor.-Am.* ii. p. 383) says that it breeds plentifully on the arctic coast of America, and that they killed it on the Saskatchewan on passage; and I met with it commonly on the coast of New Brunswick during the autumn migration. It is met with down to the Southern States, but does not appear to range below the limits of the United-States territory, and I never observed it when collecting in Texas. Dr. Elliott Coues says that in North Carolina it is very abundant in April and May, and from September to November, some few probably remaining over winter. It occurs on the Pacific as well as on the Atlantic side of N. America; Mr. Bannister found it common at St. Michael's, and Mr. Elliott in British Columbia. Bischoff obtained ten specimens at Sitka; and Mr. Dall says that it was not uncommon at Nulato, and plentiful at the Yukon mouth, where its eggs were obtained. It also occurs on the Atlantic islands, as Gundlach records it in Cuba from October to May.

The Dunlin frequents the muddy shores of estuaries near the coast, places on the latter which are left bare when the tide recedes, sometimes the shores of inland waters, morasses, &c., but always such places as are entirely open and free from trees or bushes, and especially where the soil is muddy and not sandy. During the winter and when on passage it is most frequently met with on the coast, and very often in vast flocks. At high water these flocks remain on the sands or headlands; but so soon as the water recedes they are all activity, and scatter about the places left bare by the falling tide, searching diligently after food; and the present species is often found in company with Sanderlings, Ringed Plovers, and other small waders. I have often seen them feeding close to the edge of the water, following the wave as it recedes, and running swiftly out of the way as it again advances; but a large expanse of mudflat appears to be their most congenial haunt. Unless they have been fired at or otherwise disturbed, the Dunlins are not very shy; but when once they have gained sufficient experience to know and fear any one with a gun it is not so easy to approach within gun-shot range. They feed on small crustaceans, marine worms, and insects of various kinds, which they either pick up off the ground or obtain by probing in the soft mud. Sometimes they will wade into shallow water; but, as a rule, they appear to do this but seldom. The flight of the Dunlin is very swift, being a succession of regular beats of the wing, with occasional intermissions, the wings not being fully extended, but

rather drawn in, the outer primaries being almost parallel with the body. When a large flock is on the wing the entire number fly with great regularity, as if drilled; and various evolutions are performed before they settle, the entire flock now turning one way so as to show the white undersurface, and now exposing nothing to the bystander's view but the dark upper parts. The usual call-note is a clear whistle, like the syllable *trui*, sometimes softer and sometimes more harsh; and it is more frequently uttered when the bird is on the wing than when on the ground. When a flock is scattered about, feeding, I have when near heard some of the individuals utter a soft piping note. During the pairing-season the male performs, like most of its allies, peculiar evolutions on the wing, rising in the air like a Pipit and gradually descending—its note *tri, tri, tri, tri*, several times repeated in succession, being at first somewhat slowly and then by degrees more quickly uttered. It also utters these notes when on the ground near its nest. The locality chosen for the purpose of nidification is usually near the sea in some open swampy place, or in places which are covered with short grass. The nest is a mere depression worked in the ground, carelessly lined with a few small bents. Mr. Benzon, who has frequently taken its nest in Denmark, writes to me that all he has found are “depressions in the ground about 65–70 millims. in diameter, and about 30 millims. in depth. The eggs, four in number, are large for the size of the bird, measuring from 32 by 22 to 38 by 26 millimetres, and are placed with the pointed ends towards the centre. The time when the eggs are deposited varies from the 29th April to the 15th June; it would therefore appear as if some, at least, bred twice in the season; or else the younger birds breed later in the season than the older ones; but in places where the eggs are so frequently taken it is hard to decide with any degree of certainty as to the reason why eggs are found at such different times.” Like those of its allies, the eggs of the Dunlin are pear-shaped, and are subject to considerable variation in coloration. Some have the ground-colour pale greenish grey, others dark stone-buff, and others, again, pale stone-coloured; the underlying shell-markings are pale purplish grey; and the surface-spots, which are generally distributed over the surface of the shell, are dark brown. Some have the spots collected more towards the larger end; and others are somewhat profusely and generally spotted. In size they vary from  $1\frac{8}{40}$  by  $\frac{38}{40}$  inch to  $1\frac{16}{40}$  by  $\frac{38}{40}$ , and  $1\frac{15}{40}$  by 1 inch.

Mr. Benzon informs me that he possesses a large series of eggs, which he describes as being “yellowish, yellowish grey, olivaceous, sometimes greenish olive, marked with brownish or brownish-grey shell-markings and brown surface-spots, these latter being more numerous at the larger end. One egg is quite white; and several are but slightly spotted, some wanting the surface-spots altogether.”

When the young are able to take care of themselves they flock together; and during passage one often sees flocks composed almost entirely of young birds. It would also appear that they do not breed in the next season after they are hatched, but not before the second season or third year of existence.

The specimens figured are an adult bird in full breeding-dress and one in full winter dress.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♀. Pagham, Sussex, February 12th, 1870 (*R. B. Sharpe*). *b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v*. Pagham, Sussex, July 1872 (*R. B. Sharpe*). *w, ♂*. Pagham, Sussex, May 1867 (*H. E. Dresser*). *x*. Pagham, Sussex, May 2nd, 1872 (*R. B. Sharpe*). *y, ♀, z, ♀, aa, ♂, ab, ♂, ac, ♀, ad, ♀, ae, ♂, af, ag*. Pagham, Sussex, July 11th, 1870 (*R. B. Sharpe*). *ah*. Rye, Sussex, September 8th, 1860 (*H. E. Dresser*). *ai*. Orkney Islands. *aj, ♀, ak, ♀, al, juv.* Öland, July 27th, 1867. *am, ♂*. Suzma, near Archangel, August 4th, 1872 (*J. N. Piottuch*). *an*. Lake Baikal, May 30th, 1869 (*L. Sabanäeff*). *ao, ♀, ap*. Allach, Siberia, August 21st, 1863 (*L. Sabanäeff*). *aq*. New Hampshire, U. S., December 4th, 1860 (*E. Coues*). *ar*. Philadelphia (*John Krider*). *as, pull.* Porsangerfjord, July 2nd, 1872. *at, pull.* North Germany, July 1871.

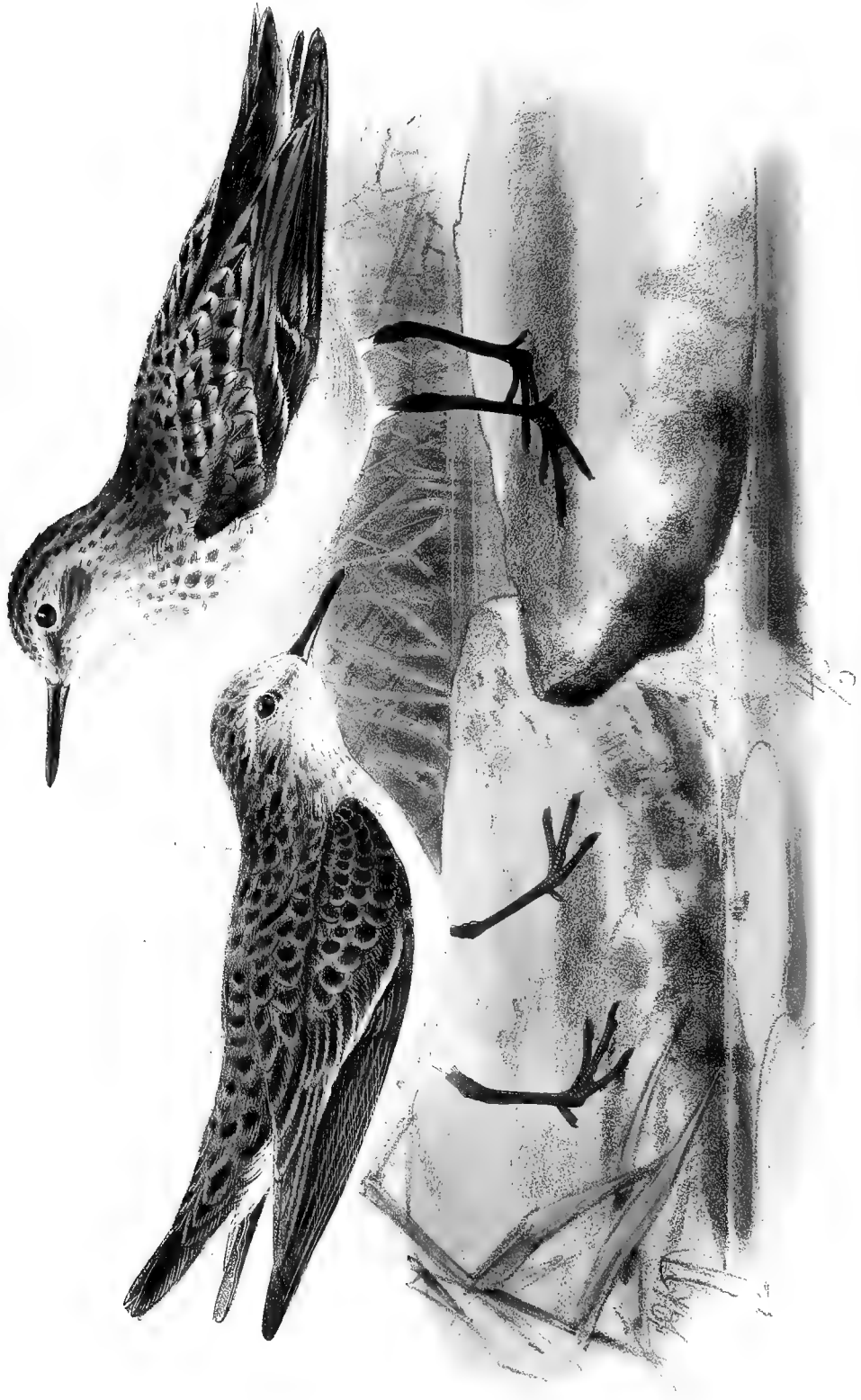
*E Mus. Howard Saunders.*

*a, ♀*. Orkneys, June 30th. *b, ♂, c, ♂, d, ♀*. Valencia, March 15th, April 30th, and May 8th. *e, ♂*. Malaga, December 28th.

*E Mus. C. A. Wright.*

*a, juv.* Malta, November 5th, 1869 (*C. A. W.*). *b*. Malta, September 26th, 1862 (*C. A. W.*). *c, ♂*. Malta, November 1869 (*C. A. W.*). *d, ♀*. Malta, September 29th, 1866 (*C. A. W.*). *e*. Malta, August 25th, 1861 (*C. A. W.*),





LITTLE STINT  
*TRINGA MINUTA.*

TEMMINCK'S STINT  
*TRINGA TEMMINCK.*

## TRINGA MINUTA.

(LITTLE STINT.)

*Tringa pusilla*, Meyer und Wolf, Taschenb. deutsch. Vogelk. ii. p. 391 (1810, nec Linn.).*Tringa minuta*, Leisler, Nachtrag zu Bechst. Naturg. Deutschl. i. p. 74 (1811).*Tringa temmincki*, Koch, Syst. d. Baier. Zool. p. 292 (1816, nec Leisler).*Pelidna minuta*, Boie, Isis, 1826, p. 979.*Actodromas minuta*, Kaup, Natürl. Syst. p. 55 (1829).*Pelidna pusilla*, Brehm, Vög. Deutschl. p. 666 (1831).*Schaeniclus minuta*, Gray, Cat. Brit. Mus. Grallæ, p. 106 (1844).

*Little Stint*, *Least Sandpiper*, English; *Bécasseau minule*, French; *Gambeccio*, Italian;  
*kleiner Strandläufer*, German; *kleine Strandlooper*, Dutch; *dværg Strandløber*, Danish;  
*lilla Strandvipan*, Swedish; *liden Strandvibe*, Norwegian.

*Figuræ notabiles.*

Naum. Vög. Deutschl. vii. Taf. 184; Gould, B. of Eur. iv. pl. 332; Yarr. Brit. B. ii. p. 643;  
 Kjærb. Orn. Dan. Afb. xxxv. p. 2; Schl. Vog. Nederl. pl. 233; Sundev. Svensk. Fogl.  
 pl. xliii. fig. 4; Fritsch, Vög. Eur. tab. 39. figs. 1, 9; Gould, B. Gr. Br. part xvii.

♂ *æstiv.* suprâ pulchrè rufus, plumis conspicuè medialiter nigris, albido marginatis, scapularibus dorso concoloribus: fronte genisque albis, vix punctulis brunneis variis: regione auriculari et colli lateribus rufis, dorso concoloribus: tectricibus alarum minimis cinerascenti-brunneis, medianis rufescentibus, majoribus plus minusve rufescentibus, albo terminatis, fasciam alarem formantibus: remigibus saturatè brunneis, versus apicem nigricantibus, scapis omnibus albis, primariis interioribus extùs albo marginatis, secundariis longissimis nigris rufo undique marginatis: dorso imo et uropygio rufis nigro variegatis, lateraliter conspicuè albis: caudâ cinerascete, rectricibus duabus mediis exceptis nigris rufo marginatis: subtùs albus, pectore antico paullulò obscuriore, rufo lavato et punctulis minimis brunneis notato: subcaudalibus albis caudæ longitudinem æquantibus: subalaribus albis, minimis cinerascenti-brunneo notatis: rostro et pedibus nigris: iride saturatè brunneâ.

♀ *æstiv.* haud a mari distinguenda.

♂ *hiem.* suprâ griseo-brunnescens, plumis medialiter saturatè brunneis: fronte cum supercilio antico genisque albidis: plumis anteocularibus et regione paroticâ grisescentibus: scapularibus dorso concoloribus, rachidibus nigris; tectricibus alarum minimis saturatè brunneis, vix albido marginatis, medianis et majoribus plus minusve griseo-brunnescens, his albo terminatis, fasciam alarem conspicuam formantibus: remigibus brunneis, versus apicem nigricantibus, scapis albis ad basin brunnescens, secundariis grisescentibus scapis nigris, plumis longissimis saturatè brunneis: caudâ pallidè cinerascenti-brunneâ, pennis duabus mediis saturatè brunneis exceptis: subtùs albescens, pectoris superioris lateribus fusciscenti-brunneis: subalaribus albis, majoribus paullò cinerascens.

♂ *autumn.* suprâ saturatè brunneus, pilei dorsique totius plumis rufo marginatis: scapularibus dorso concolori-

bus sed albido lavatis: fronte cum genis et supercilio distincto albis: lineâ a basi rostri per oculum ductâ cum regione paroticâ brunnescentibus rufo tinctis: nuchâ et collo toto postico grisescenti-brunneis: tectricibus alarum minimis saturatè brunneis angustè rufo marginatis, medianis et majoribus fulvo lavatis, his albo terminatis, fasciam alarem conspicuam formantibus: remigibus saturatè brunneis, scapis albis, nonnullis ad basin brunnescentibus, secundariis albo marginatis, intimis longissimis brunneis fulvo marginatis: caudâ pallidè cinerascenti-brunneâ, pennis duabus mediis brunneis rufo marginatis exceptis: subtùs purè albus, pectore antico paullo fulvescente.

*Adult male in breeding-plumage.* Above rufous, the centre of the feathers black, which shows rather conspicuously, especially on the scapulars, most of the feathers edged with whitish, giving a hoary appearance to the upper surface of the body; forehead and cheeks more especially white, with minute specks of brown here and there; the feathers in front of the eye, ear-coverts, and sides of the neck very clear rufous, mottled with blackish, and very slightly varied with hoary white; wing-coverts greyish brown, the least ones entirely of this colour, the greater ones varied with rufous like the back, and both these and the innermost dark brown, primary coverts tipped with white, forming a distinct bar across the wing; quills glossy greyish-brown, becoming black towards the tip, shafts white, tinged with brownish at the base and near the tip; the inner primaries edged conspicuously with white near the base, median quills narrowly edged with white, the inner secondaries greyish brown, with broad black centres and very broad rufous margins to the feathers, which are likewise varied with hoary white like the back; upper tail-coverts blackish, slightly varied with rufous at the tip; tail pale ashy brown, with narrow margins of white, the two centre feathers black, with rufous edges; under surface of the body pure white, the fore part of the chest rufescent, slightly greyish, with specks of blackish brown; under tail-coverts very long, and pure white, as are also the feathers on the side of the vent, the latter showing conspicuously on each side of the rump; under wing-coverts white, the small feathers on the edge of the wing varied with greyish brown; axillary plumes white; bill and feet black; iris dark brown. Total length 5.3 inches, culmen 0.7, wing 3.6, tail 1.5, tarsus 0.8.

*Obs.* The specimen above described was procured by Dresser at Barcelona, in Spain, on the 10th of May 1866; and a female obtained at the same time showed no difference of any consequence, except in being less hoary and not having such distinct white edgings to the feathers; there is less white also on the forehead and cheeks, these parts being slightly tinged with rufous. A female, shot near the coast of the Black Sea by Mr. Robson on the 5th of June, 1871, is not quite in full plumage, having very little rufous on the greater and median coverts; a male, however, killed on the same day, is in full summer dress; so that it is possible that the female is a little later in assuming the full summer plumage, as is the case with many other Waders.

*Winter plumage.* Upper surface greyish brown, mottled with blackish, this appearance being caused by the dark centres to the feathers, which show conspicuously; forehead and a slight eyebrow, feathers round the eye and cheeks whitish; feathers in front of the eye and ear-coverts greyish brown; scapulars greyish brown, like the back, with a central shaft-stripe of dark brown; least and median wing-coverts dark brown, with very narrow whitish margins to the latter feathers; greater coverts greyish brown, with a white tip forming a distinct alar bar; quills dark brown, with white shafts for the most part, though one or two are strongly tinged with brownish near the base and tip; secondaries dark brown; tail-feathers pale ashy-brown, except the two centre feathers, which are dark brown; under surface of the body white, with a patch of greyish brown on each side of the upper breast.

*Young in autumn plumage.* Crown of the head dark brown, tinged with rufous, and slightly varied with whitish; forehead and a very distinct eyebrow, as well as the cheeks, pure white; feathers between the

bill and the eye greyish brown, faintly tinged with rufous; nape and back of the neck greyish brown; back entirely dark brown, with rufous edgings to the feathers; scapulars tinged with buff and conspicuously margined with white; least wing-coverts dark brown, very minutely edged with rufous, median and greater coverts edged with buff, the latter tipped with white, forming a distinct alar bar; quills dark brown, with white shafts, the smaller primaries white along the base of the outer web; secondaries greyish brown, edged with whitish, the innermost long plumes dark brown, margined with rufous; tail-feathers ashy brown, edged with white, except the two centre feathers, which are dark brown, with rufous margins; under surface of the body pure white, the chest tinged with buff; under wing-coverts white, the greater ones somewhat tinged with ashy.

*Obs.* The winter plumage of the Little Stint is seldom or never observed in the north of Europe, the birds which are shot in the autumn being mostly young ones, as may be distinguished by the rufous edgings to the feathers and by the grey nape. In the Sahara, and also in Palestine, Canon Tristram has met with it in full winter dress; and a specimen in his collection from the former locality is exceedingly pretty, reminding one of a miniature Purple Sandpiper by reason of the glossy black mottling of the upper surface; it is of very small size, and is apparently a bird of the year. From the Cape Colony and South Africa we get the present species in winter plumage, when it is found to be quite grey; but before the bird leaves its winter haunts it has begun to assume its summer livery; for a specimen in Canon Tristram's collection, shot by Mr. Ayres in Natal, is becoming very rufous, and is in sufficiently interesting dress to merit a separate description, which is given below. Another example, in our own cabinet, from the river Gambia, is also in particoloured plumage, the general colour being grey, but the scapulars, longest secondaries, and a few of the dorsal plumes edged with rufous.

*Male in changing spring plumage.* General colour greyish brown, above mottled with rufous, the feathers in the centre of the back entirely black with no rufous margins, those of the lower back and rump edged with rufous; wings coloured as in the winter plumage, with the exception of a slight tinge of rufous here and there on the greater and median coverts; the long secondaries margined with rufous; forehead and cheeks whitish, the latter minutely speckled with brownish, and very slightly tinged with rufous; under surface of the body white, the upper part of the breast greyish, tinged with rufous, and very distinctly streaked with tiny spots of brown.

*Comparison with Temminck's Stint.* The Little Stint may be distinguished at all ages by the following characters:—1, by its slightly larger size; 2, by the greater amount of white on the primaries; 3, by its longer tarsus; 4, by its outer tail-feathers being pale ashy brown, and not pure white. At the various seasons of the year the characters which they possess in common, and the points in which they differ may be thus enumerated.

- (a) *Little Stint (Summer).* Upper surface bright rufous, slightly mottled with black, with white edgings to a great many of the dorsal plumes; all the shafts of the primaries for the most part white; all the tail, except the two centre feathers, pale ashy brown; chest ashy brown, but strongly tinged with rufous, and mottled with brown; legs black, or greenish black; length of tarsus 0·75–0·86.
- (a) *Temminck's Stint (Summer).* Upper plumage greyish brown with dull rufous edgings to the feathers, and no white margins; outer primary with a white shaft, the rest with brown shafts; outer tail-feathers pure white, the rest white marked more or less with ashy brown as they approach the middle of the tail; chest ashy grey, very slightly tinged with rufous, and minutely speckled with dark brown; legs light brown; length of tarsus 0·65–0·7.
- (b) *Little Stint (Winter).* Besides the differences of size and the constant characters mentioned above, the present bird may always be distinguished from Temminck's Stint by the following points:—back

mottled with dark brown centres to the feathers; chest whitish, very slightly washed with grey, and speckled with brown on the sides.

- (b) *Temminck's Stint (Winter)*. Upper surface uniform greyish brown; chest entirely ashy grey, with a few white margins to the feathers.
- (c) *Little Stint (Autumn)*. Head and back washed with rufous; scapulars broadly edged with black; chest slightly inclining to ashy, washed with delicate buff.
- (c) *Temminck's Stint (Autumn)*. Upper surface greyish brown with no rufous, but the feathers more or less distinctly margined with buff, and no white markings at all; chest decidedly ashy brown.

*Explanation of the Plate.* The illustration facing the present article represents the Little Stint and Temminck's Stint, each in full summer dress.

*Obs.* As we have now before us a very fine series of Stints from all parts of the world, representing probably every species of these pigmy waders, it may not be out of place to add a few words on the material which the kindness of many friends has placed at our disposal. In the third volume of the 'Hand-list,' Mr. G. R. Gray enumerates the following different species (p. 50):—1, *T. minuta*, Leisl.; 2, *T. albescens*, Temm.; 3, *T. salina*, Pall.; 4, *T. australis*, Cuv.; 5, *T. temminckii*, Leisl.; 6, *T. wilsonii*, Nutt.; 7, *T. minutilla*, Vieill.; 8, *T. fuscicollis*, Vieill.; of these we are able to distinguish but five, as follows:—

*Summer Plumage.*

- A. Outer tail-feather pale ashy brown.
  - a. Quills with white shafts.
    - a'. Throat white; breast sparsely spotted with brown and tinged with rufous . 1. *minuta*.
    - b'. Chin only whitish; breast thickly spotted with brown and tinged with ashy fulvous . . . . . 2. *minutilla*.
    - c'. Entire throat and breast rich rufous, the latter slightly mottled with brownish . . . . . 3. *albescens*.
    - b. Quills with brown shafts . . . . . 4. *salina*.
  - B. Outer tail-feather pure white . . . . . 5. *temmincki*.

The descriptions given at the commencement of this article will, we trust, render the recognition of *Tringa minuta* in Europe an easy matter; and we pass on at once to the consideration of *T. minutilla*, which has been obtained twice in England.

*T. minutilla.* In his paper on the *Tringæ* of North America (Proc. Phil. Acad. 1861, p. 170), Dr. Elliott Coues gives an admirable account of this species, which we thoroughly indorse, and we do not agree with Mr. G. R. Gray in the distinctness of *T. wilsonii* from *T. minutilla*. We have now before us an excellent series from different parts of Northern and Central America, and we can confidently assert that the birds constitute an entirely distinct species from *T. minuta* of Europe; and we suspect that *T. fuscicollis*, founded on the *Chorlito pestorejo pardo* of Azara, from Paraguay, is nothing but the present bird in winter plumage. Independently of its small size, the style of dress in the breeding-season is quite different, being almost entirely black above with a very slight admixture of rufous, whereas in *T. minuta* the prevailing colour is rufous at this season of the year; on the breast also the coloration is different, the chin and abdomen being dull white, and the fore part of the chest ashy buff, covered with little dots of dark brown, whereas in *T. minuta* the chest is rufous mixed with ashy, with tiny little brown markings. The American Stint is in fact a much darker bird; and this peculiarity is likewise exhibited in the young, which, although coloured as in *T. minuta*, is much blacker, with very narrow rufous edgings, and scarcely any white margins as in the last-named bird; the

chest is decidedly buff, with dark brown markings on the side of the upper breast. Dr. Coues very kindly sent us a specimen of the present species out of his own cabinet, in summer plumage; but it is not in such full nuptial dress as some examples collected by Dresser at Matamoras, in Mexico. Dr. Coues believes there may be more than one species in America; but we think this unlikely; nor is there any dependance to be placed on measurements in these birds, for they vary in a wonderful manner; the western specimen described by the learned doctor, and which he thinks may be distinct, seems to us to be only the ordinary species in winter plumage.

*T. albescens*. Professor Schlegel (Mus. Pays-Bas, *Scolopaces*, p. 43) and Drs. Finsch and Hartlaub (Orn. Ost-Afr. p. 764) unite this species to *T. minuta*, though they speak of the rufous breast as occurring in individuals from China. This is of course the most distinguishing characteristic of the species, causing it in summer plumage to look like a miniature Pigmy Curlew; and thus it is easily distinguishable from *T. minuta* in that stage of plumage. In winter dress, however, it is almost undistinguishable from the last-named bird; and the only point of difference which we can perceive to be constant is the stouter tarsus, which never exceeds 0·7 inch in length in the present species. The long secondaries in adult birds never reach so near to the tips of the primaries as in the Little Stint, though in young birds this is a character which varies much. Compared with the young of *T. minuta*, specimens of *T. albescens* of equal size are darker, have much less white, and not nearly so grey a nape. Examples, as we believe, of *T. albescens* are now before us from Japan (*Whitely*), Amoy (*Swinhoe*), S.-W. Formosa (*Swinhoe*), and Morty Island (*Bernstein*). The last-named bird is marked by Professor Schlegel *T. minuta*; and Drs. Finsch and Hartlaub say that a specimen examined by them from Australia was undistinguishable from a Damara bird in winter plumage, so that it is possible that the true *T. minuta* extends in winter throughout the Malay archipelago into Australia, though we ourselves believe that it is *T. albescens* and not *T. minuta* which makes the last-named country its home in winter. No one, however, can settle these difficult points without a critical examination of a very large series of specimens from all localities.

*T. salina*. This bird is a Stint with the form and coloration of *T. minuta*, but with the wings of *T. temmincki*; for like the last-named bird it has brown shafts to all but the outermost primary. From all the other Stints, however, it may be distinguished by its abnormally long toes, the excess in length of which is set forth in the comparative table of measurements. Its nearest ally is certainly *T. minuta*, to which it assimilates in summer and winter dress. We have examined specimens from Lake Baikal (*mus. Walden*), Amoorland (*Dr. Maack, mus. R. Swinhoe*), Amoy (*Swinhoe*), S.-W. Formosa (*Swinhoe*), India (*mus. R. Swinhoe*).

*T. temmincki*. A full description of this species is given in the adjoining article. It may always be told from every one of the other Stints by the white outer tail-feather, and in winter plumage by its uniform greyish brown back.

The comparative measurements of the five species are as follows:—

	Total length. inches.	Culmen. inch.	Wing. inches.	Tail. inch.	Tarsus. inch.	Middle toe. inch.
1. <i>T. minuta</i> . . . . .	5·5–6·3	0·7–0·8	3·6–4·0	1·65–1·7	0·7–0·8	0·75
2. <i>T. minutilla</i> . . . . .	4·7–5·5	0·7–0·8	3·3–3·55	1·5–1·6	0·7	0·75
3. <i>T. albescens</i> . . . . .	5·0–6·2	0·65–0·75	3·7–4·2	1·85–1·9	0·7	0·7
4. <i>T. salina</i> . . . . .	4·8–5·5	0·65–0·8	3·2–3·7	1·5–1·75	0·8–0·85	0·9
5. <i>T. temmincki</i> . . . . .	4·5–5·5	0·65–0·75	3·5–3·9	1·9–2·1	0·7	0·75

THE present species is met with in most parts of Europe only during migration, and it is at present only known to breed in Siberia, where its eggs have been discovered by Dr. von Midden-dorff. In winter it certainly reaches South Africa, and is at this season of the year also met with

in India; but how far in a south easterly direction its range extends, and the point where it meets that of *T. albescens*, are matters for future scientific research to determine.

Throughout Great Britain and Ireland it is found at the seasons of migration, and is certainly more numerous in autumn, when it is seen more or less plentifully on the eastern coasts. Mr. R. Collett states that this Sandpiper is very common near Christiania in spring and autumn, arriving in flocks, with Dunlins, in the middle of August, and leaving for the south about the last of September. Nilsson also states that it is common in Sweden at the same period of the year; and according to Sommerfeldt it appears in spring on the Tana river, and in autumn on the Varanger Fiord in company with other waders, but is not common. Throughout the whole of Germany and Central Europe, it is common during migration, occurring on the coasts and in the interior. Schlegel says that it is met with in Holland more often in the interior than on the coast; and this is partly confirmed by Mr. H. M. Labouchere, who writes to us as follows:—"This bird occasionally visits Holland in autumn, and may then be seen near the dykes and on the banks of rivers and lakes." De Selys Longchamps says that it is rare in Belgium, occurring during migration; and Mr. J. H. Gurney writes:—"I was told by the Curator of the Museum at Tournai that this species (usually solitary) is constantly found frequenting the banks of the Scheldt in that neighbourhood during its northward migration in spring; it is then in breeding-dress." Krøner states that it is an occasional visitor in autumn to Alsace and the Vosges, on the borders of the rivers and lakes. Degland and Gerbe observe that it is found regularly during migration in the north of France, particularly on the coast near Dunquerque, where it appears late in August and in April. In the spring it is sometimes seen in the marshes near Lille; and according to Jaubert and Barthélemy Lapommeraye it passes through Provence late in August or in September, returning in March or April. Savi states that it migrates through Italy in May and September, and it is met with in Sicily at the same time of the year. From Spain we have seen some beautiful specimens in full summer dress collected by Dresser and Mr. Howard Saunders. Major Irby, however, has only met with it once, on November 8th, near Tangier; and this is confirmed by Mr. C. F. Tyrwhitt Drake, who found it in the same country at a small lake near Lavaiche. Loche states that it is common in Algeria during the winter; and Mr. C. A. Wright records it as "very common in Malta and Gozo in spring, part of summer, and autumn." Lord Lilford observes that it is rather common in April and May in the Ionian Islands, particularly on the race-course of Corfu, which is an excellent locality for birds of many species at various seasons; but Lieut. Sperling found it rather rare at Missolonghi in the early part of April. Von der Mühle states that this species remains in Greece throughout the winter, and some are found in May or even in June. Mr. Robson sends us the following note:—"The Little Stint is pretty numerous during the spring and autumn migrations in both Asiatic and European Turkey, arriving in the middle of May, and departing in the early part of September, but it is never seen in winter." The same gentleman also tells us that it breeds in the neighbourhood of the Black Sea; but though it is true that Mr. Robson has sent us some birds in full breeding-plumage shot as late as June 5th, we must see eggs actually taken from that locality before we can believe that this bird breeds in South-eastern Europe. Professor von Nordmann found it not uncommon in New Russia and Bessarabia during the periods of migration. A few straggling pairs were seen late in May 1835 in the southern part of the Crimea. Late in August, or early in September, when it migrates

back, it is numerous in the marshes of Bessarabia. M. Ménétriés found it also in the Caucasus. Messrs. Dickson and Ross procured it at the village of So-vok Scherméh, near Erzeroom.

Before following out the range of the species eastward, we record its occurrence in Africa as follows. Dr. Tristram observes:—Once seen on the coast of Palestine in December; and a pair shot at the south end of the Dead Sea in February, out of a small flock. Captain Shelley has found it common throughout Egypt, all his specimens being in winter plumage. Examples from Nubia are in the Berlin Museum; and Petherick obtained it in Kordofan, Vierthaler on the Blue Nile, while Heuglin states that it frequents the shores of the Red Sea even down to the Somali coasts. On the Sinaitic Peninsula Mr. C. W. Wyatt found it in the marshes near Tor. In West Africa we have it in our own collection from the Gambia; and Verreaux has received it from Casamance: it has been found at different points on the west coast down as far as Benguela and Damaraland. According to Mr. Layard it is common at the Cape in winter, in marshes and on the sea-board; and Mr. Ayres has found it both in Natal and the Transvaal. Mr. Layard has also met with it at Fazy on the east coast; and Mr. Edward Newton says it is common in the Seychelles archipelago.

Dr. Jerdon in the 'Birds of India' writes:—"Very abundant throughout India in winter, associating in large flocks, and feeding on marshy ground, rice-fields, and the edges of tanks and rivers. It is very excellent eating." Dr. Leith Adams noticed it as of common occurrence on the rivers of the Punjab; and Captain Irby observed it to be numerous during the cold season in Oudh and Kumaon. Hartlaub has recorded it from Ceylon. Although it has been stated by Professor Schlegel and others to occur throughout the Moluccas, and to extend into Australia, we cannot help thinking that in many instances *T. albescens* has been confounded with *T. minuta* in the winter plumage.

Dr. G. Radde observed the Little Stint commonly in the marshes at Kira (the south-east part of the Apfelgebirge) on the 3rd and 5th of August. They were then in flocks; but he saw a few straggling single birds. The following note is given by Dr. von Middendorff:—"Commoner than *Tringa temminckii* both in the high north and in the far south-east of Siberia. On the Taimyr river (74° N. lat.) I observed this species on the 17th of June, and found, in a female I had shot, the eggs almost ready for exclusion. On the 22nd of June a bird of this species rose up before me, uttering a shrill twittering, and hovered, like a hawk, on the same spot, the wings being held up above the back, and at the same time struck out backwards. It is probable that this was a male in the act of drumming. On the 1st of July I saw a female of this species run at me with its plumage puffed out and head drawn in; and it was so eager in the defence of its nest, that I had time to take off my game-bag and knock it over. In a depression in the swampy moss four greenish-brown spotted eggs lay, not twenty paces from a large pond. In the nest, under the eggs, were only a few dry willow leaves, which had probably been blown thither by the wind, and not placed there by the bird itself. The eggs agree with those figured by Thienemann. On the 10th of July I caught young birds in down, and saw others flying about up to the 11th of August, latterly always in flocks of Dunlins (*Tringa cinclus*). On the Boganida the first of these birds was not shot before the 6th of June. On the south coast of the Sea of Ochotsk I found in the early half of June large flocks of this species consisting partly of males, and partly of females. In colour these birds differed from those found in the high north by having the lower sides of

the neck plain unspotted rusty red, the throat being of the same colour as it, or else (more generally) pure white. These birds agree with Gould's plate of the bird in summer plumage, whereas the bird from the high north agrees with Naumann's. A single female shot at Udskoj-Astróg on the 24th of May agreed, on the other hand, to the minutest detail with those procured from the Taimyr river. A bird of this species, when on the shore and hard pressed by a hawk, dived under the water with ease; and I also observed on several occasions that Little Stints when wounded, on having stones thrown at them, dived, uttering a loud twittering note."

Dr. L. von Schrenck also writes as follows:—" *Tringa minuta* appears to be more numerous both in autumn and spring in the Amoor country than the preceding species (*Tringa temminckii*). Mr. Maack observed them on the spring migrations at the source of the Amoor, on the Lower Schilka, near the mouth of the Garbiza on the 18th (30th) of May, and procured two specimens, one of which was in full summer plumage, and the other had the remains of the winter plumage on the upper wing-coverts and rump. I repeatedly shot the Little Stint during the autumn migration on the upper and lower Amoor. At the former locality I met with a flock of both sexes mixed on the 6th (18th) of August, a little above the mouth of the Bureja. They frequented a sandy and muddy part of the shore; and I shot three birds with rust-coloured necks. All three were in summer plumage much worn, and on the upper part of the back of one a few winter feathers began to appear. At the mouth of the Amoor, at the Nikolaievsk post, I shot young birds on the 8th and 12th of September (new style) which were quite in immature plumage."

As we before stated, this Stint is occasionally met with in twos and threes, or small flocks, on our coasts during the autumn migration. It frequents the sea-shore, tripping swiftly along the very edge of the water, occasionally even, like the Dunlin, following the receding wave and avoiding it as it returns, running with great speed, the head drawn closely in to the shoulders. In the marshes near the sea-shore it is often seen about the puddles, or on the mud banks, in search of small insects, and generally in company with other Waders, and bears considerable resemblance to the Dunlin, being in its winter dress very like one in miniature. From Temminck's Stint it is very easily distinguishable, both on the wing and on the ground, by its pure white underparts.

Respecting its flight Layard thus remarks:—"This is very beautiful when in large flocks; various evolutions, performed simultaneously, show alternately the dark upper plumage and the white undersides like flashes of light, particularly when seen against a dull lowering sky." Its flight is swift, but very irregular, and but seldom in a straight direction, though not so butterfly-like as that of Temminck's Stint; the strokes of the wing are very rapid, and it is not an easy bird to kill in flight. When flying it calls almost incessantly, its note resembling that of Temminck's Stint, but stronger, somewhat deeper, and easily distinguished by an experienced ear. Naumann very correctly describes it as *Dürrrr*, *Dürrrü*, or *dirrr*, *dirrrit*, *it*, *it*; and when a flock are calling, it sounds almost like the confused chirping of grasshoppers or crickets. But little is known respecting its breeding-habits; and, in fact, all the particulars we are able to obtain on this head we have translated as above from Dr. von Middendorff's 'Sibirische Reise.'

Mr. R. Collett writes to us that he found the stomachs of birds shot in August 1870 near Christiania to contain seeds of various shore-plants. Yarrell says they are frequent on the coasts

of Suffolk, Norfolk, Yorkshire, and Durham in the autumn. They select for food aquatic insects, small crustacea, worms, and mollusca. Mr. Stevenson gives the following anecdote:—"Mr. J. H. Gurney informs me that on one occasion when shooting at Salthouse, a Little Stint having been only slightly wounded in the wing, he carried it alive to Cromer, and turned it loose in his room, where, to his surprise, it exhibited so little uneasiness in its new quarters that on the same day it ate flies out of his hand without the least symptom of alarm."

Our friend Mr. J. Harvie Brown, jun., has very kindly given us the following, extracted from his note-book:—"It is perhaps somewhat curious that this beautiful little wading bird should appear in such small numbers at Grangemouth, as compared with other localities. Whilst at Aberdeen this season no less than sixteen specimens were killed at one shot by a gunner at the mouth of the Don, as Mr. Robert Gray informs me, only two or three solitary birds, accompanying the flocks of Dunlins, were observed by us on the Avonmouth Shell-bank; and the only specimen we have ever obtained on this coast was on the 7th September 1870. When flying, the extremely diminutive size of the bird first attracted our attention, as also, if we may so express it, the airier motion of the wings. Mr. E. R. Alston, who was present when it was shot, distinctly heard its note upon the occasion of its first flight across the shell-bank—a whispering, warbling note, very different from the loud trill of the Dunlin. I cannot account for their comparative scarcity here, otherwise than by the absence of sandy coast, combined with the fact that the Stirlingshire shore lies out of the regular course of the migration of the main body, which, I believe, crosses the entrance of the Firth of Forth from the north to the south shores, and does not follow all the sinuosities of the coast-line."

The adult male in breeding-dress is described from a specimen procured by Dresser at Barcelona, on the 10th of May 1866, and the young in autumn from a bird shot by Sharpe at Pagham, in Sussex, in September 1870: both these examples are in our collection. The winter plumage is taken from a specimen in Lord Walden's collection, obtained by the late Mr. C. J. Andersson, at Walvisch Bay, in Damaraland, on the 26th of November 1863.

In the preparation of the above article we have examined the following specimens:—

*E Mus. Sharpe and Dresser.*

*a.* Rye, Sussex, September 14th, 1860 (*H. E. Dresser*). *b, c, d, e, f.* Pagham, Sussex, September 1870 (*R. B. Sharpe*). *g, h, ♂ ♀.* Barcelona, Spain, May 10th, 1866 (*H. E. Dresser*). *i, j.* Turkey, June 5th, 1871 (*T. Robson*). *k.* Eastern Russia (*Dr. Renard*). *l.* Cape Town (*E. L. Layard*).

*E Mus. A. Basil Brooke.*

*a, ♂.* Genoa, spring of 1871 (*A. B. B.*).

*E Mus. Howard Saunders.*

*a, ♂.* Valencia, May 1870 (*H. S.*). *b.* Fort Manoel, Malta, May 27th, 1869 (*C. A. Wright*). *c, ♀.* Lake Baikal, May 27th, 1869 (*Dybowsky*).

*E Mus. J. H. Gurney, jun.*

- a*, ♀. St. Leonard's, Sussex, September 23rd, 1870 (*Kent*). *b*. Yarmouth, September 13th, 1870 (*Gunn*).  
*c*, ♂. Cromer, Norfolk, September 1858 (*Gunn*). *d*. Pagham, Sussex, September 3rd, 1869 (*R. B. Sharpe*).  
*e*. St. Petersburg, September 25th, 1869 (*J. H. G.*). *f*. Egypt, February 9th, 1871.

*E Mus. G. E. Shelley.*

- a*. Egypt, February 3rd, 1868 (*G. E. S.*). *b*. Egypt, April 22nd, 1870.

*E Mus. Lord Walden.*

- a*, ♀. Asia Minor, September 17th, 1865 (*T. Robson*). *b*, ♂. Walvisch Bay, Damaraland, November 26th, 1863 (*C. J. Andersson*). *c*, ♀. Transvaal (*Ayres*). *d*. Siberia (*Verreaux*).

*E Mus. H. B. Tristram.*

- a*. Geneva (*H. B. T.*). *b*, ♀. Temagin, Sahara, December 29th, 1856 (*H. B. T.*). *c*, ♂. Palestine, January 28th, 1864 (*H. B. T.*). *d*, ♂. Natal (*T. Ayres*). *e*. Cape Colony (*E. L. Layard*). *f*. Etawah, N.-W. India (*W. E. Brooks*).





W. H. H. H. H.

M&N Hardhart 1890

1. TRINGA MINUTA.
2. TRINGA TEMMINCKI.
3. TRINGA ALPINA.

## TRINGA MINUTA.

## APPENDIX A.

THE same may be said as to the information on record up to date respecting the nidification of the present species as is stated in the Appendix to *Squatarola helvetica*. When the article on the Little Stint was issued nothing was known about its nidification, except what is published by Von Middendorff; and as that author did not discriminate between *Tringa albescens* and the present species, there is a remote possibility that his notes may refer to that species, and not to *T. minuta*. However, I am now enabled to give the most concise details respecting the breeding-habits of the Little Stint, which was found breeding within the boundaries of Europe, on the Petchora river, in North Russia, by Messrs. Seebohm and Harvie-Brown, who, amongst other extreme rarities, brought back its eggs, as well as the young in down.

I am indebted to Mr. Seebohm for the following interesting account of the discovery made by his friend and himself:—"Of all the discoveries which my friend Harvie-Brown and I made in the Petchora during our visit there in 1875, there was nothing to which we devoted more time and trouble, and which gave us greater pleasure, than the discovery of the breeding-place of the Little Stint; and after all we found it almost by a fluke. In 1872 Alston and Harvie-Brown procured a specimen of this interesting bird in full summer plumage on an island in the delta of the Dvina on 21st June; and in the same year Collett found it common on the island of Tamsö, in the Porsangerfjord, in July; and we had made up our minds that we would strain every nerve to bring home eggs of the Little Stint, especially as no authenticated specimens were known to exist in the cabinet of any ornithologist.

"As soon as the ice on the great river Petchora broke up, migratory waders began to arrive in small parties; and we shot considerable numbers of them as they fed upon the grassy banks of the swollen stream, in the hope of finding the Little Stint, but in vain. The Wood-Sandpiper and Temminck's Stint arrived on 26th May, and were soon common enough. A few days afterwards we met with the Terek and the common Sandpiper; and before we reached the delta we found Temminck's Stint breeding sparingly on the banks of the river. At Alexievka and the adjacent islands the latter bird was abundant, and by the middle of July we had taken young in down; but up to this date we had seen no trace whatever of the Little Stint. Nevertheless we did not despair. On the tundra opposite Alexievka we found the Dunlin and the Grey Plover breeding—two birds that we had not seen at all on migration; so that it was obvious that many birds did not pass Ust Zylma on their way to the tundra. We consoled ourselves with the theory that these birds, as well as the Little Stint, were more maritime in their habits than Temminck's Stint and the other waders we had seen at Ust Zylma, and would probably come round by the Baltic or the coast of Norway. The Grey Plover and the Dunlin we supposed would ascend the Petchora to their breeding-grounds; but the Little Stint, being still more maritime in its habits, would probably breed on some of the islands at the mouth of the great river. This opinion we afterwards gave up altogether. There is no doubt that most birds migrate direct to

their breeding-grounds; and we found in a work upon the birds of the Volga, published by the University of Kasan, the information that the Little and Temminck's Stints are seen in flocks during the first fortnight in May on the Volga, from Ssimbirska to Kasan, and on the Kama as far as Ufa. In summer they are not seen, but are found in the middle of August again at Ssimbirska. The stragglers who wander as far as Archangel and the North Cape may be barren birds who have nothing else to do.

"It was not until the middle of July that we were able to visit the islands at the mouth of the Petchora. Alexievka is the lading-port of the Petchora Timber-trading Company. Every autumn ships arrive to load with larch for Cronstadt; and to enable those ships to enter the lagoons of the Petchora, and navigate its difficult waters, various beacons and other signals have to be placed on sundry islands, promontories, and sandbanks. The rafts which bring down the timber from the interior also frequently require help when the water of the Petchora begins to subside; and, for these and other purposes connected with the business of the company, a steamer is kept at Alexievka during the few summer months of the year. The beacons on the Golievski banks are washed away every spring by the ice; and on the 13th July Captain Engel invited us to accompany him on his annual trip to replace or repair them. We gladly seized the opportunity, and spent about four hours on island No. 4, and a couple of hours on island No. 3. The former island, and as much of the latter as our limited time enabled us to explore, are barren sandbanks without a blade of grass upon them. Nevertheless we found them frequented by large flocks of Dunlins and small parties of Sanderlings, which were feeding at the water's edge and on the shallow pools left by the tide. They were very wild, and we had some difficulty in getting within shot. We secured five Sanderlings (three males, and two females). The testes of the males were small, and the eggs in the ovaries of the females not larger than dust-shot. Both males and females showed signs of moulting; and in both sexes we detected bare places like sitting-spots, but not very recent ones. Whether these flocks were composed of last year's birds and were not breeding, or whether they had already bred, is an extremely interesting question, which we were unable to solve. On island No. 2, and at the east end of island No. 3, there is said to be grass; and these birds, as well as the Curlew Sandpiper, probably breed there.

"We left the islands deeply lamenting our inability to explore them further; and having dropped a carrabas on the William bank, and a long pole, with a besom on the top and a large stone at the bottom, upon the Alexander bank, we passed Cape Constantinovka, and cast anchor at Dvoinik, or 'the twin capes.' The beacon on the promontory had been destroyed by the Samoyedes; and a new one had to be erected, which gave us a couple of hours to explore the country. As soon as we landed we struck out at once onto the tundra. We had not gone far before we came upon what we at once recognized as Grey-Plover ground; and we very soon heard the familiar cry of a pair of these birds, who showed by their actions that they had eggs or young near. Harvie-Brown stopped to watch these birds, and I went on alone; but finding that the character of the tundra did not vary much as far as the eye could reach, I turned sharp to the north towards a range of sand hills lying between the sea and a number of lakes. As soon as I reached the nearest of these lakes I caught sight of a large flock of Sandpipers flying up and down the bank. They were very wild; but by hiding amongst some dwarf willows in a cleft of the edge of the tundra, I succeeded in getting a shot at them, and dropped three onto the

ground. A smaller flock passed by directly afterwards, out of which I secured two. To my intense delight these five birds were all Little Stints, at last. On dissection they all proved to be males.

"I shortly afterwards got a shot at a small flock of Sandpipers feeding on the mud left by the tide, and killed one of them, which proved to be a Curlew Sandpiper, female. I searched diligently for nests, but in vain; and when I reached the beacon one of the boats had been waiting for me half an hour.

"It was not until the 22nd July that we were able to visit Dvoinik again. On that day the steamer was placed at our disposal, thanks to Captain Arendt; and in the afternoon we dismissed the steamer for a week, and took possession of a wrecked ship lying high and dry on the beach not far from Dvoinik.

"As soon as we had landed our stores, we started off in the evening in high glee for a raid upon the Little Stints. We hastened down to the shores of the lake, where I had seen the birds before, and carefully searched the sand hills and the other lakes, but found no trace whatever of any breeding-stations, only a flock of small Sandpipers occasionally to be seen, but so wild that we could not get within range. We then separated for a stroll on the tundra. I had not gone far before I heard our interpreter Piottuch shouting in a state of great excitement. Harvie-Brown was the first to come up; and I joined them shortly afterwards. I found them sitting on the ground with a couple of Little Stints in down. I sat down beside them, and we watched the parent bird as she was fluttering and flying and running all round us, sometimes coming within a foot of one of us. After securing the old bird we went on a short distance, and Piottuch again made loud demonstrations of delight. This time it was nest and eggs. The nest was like that of most Sandpipers, a mere depression in the ground, with such dead maroshka (cloudberry) leaves and other dry material as was within easy reach, scraped together to serve as lining. The position was on a comparatively dry extent of tundra, sloping from the top of the little turf cliffs that rise from the lagoon down to the sand hills at the twin capes, between which the tide runs in and out of a little inland sea. These sand hills are flanked on the side next the sea with piles of drift wood of all sizes and shapes—lofty trees which have been mown down by the ice when the great river broke up and in many places overflowed its banks, squared barks of timber washed away by the floods from the stores of the Petchora timber-trading company, and spars of luckless ships that have been wrecked on these inhospitable shores. They are sparingly sprinkled over with esparto grass, and soon run into an irregular strip of sand and gravel. This part of the coast, however, does not seem to have any attraction for the Little Stints. There were plenty of Ring-Dotterel upon it, and a few Temminck's Stints; and we saw a pair of Snow-Buntings with five young, which had probably been bred amongst the drift wood. At Dvoinik, however, for perhaps a verst from each twin cape, between the sand and the mouth of the little inland sea, is an extent of dead flat land, covered over with thick short grass, and full of little lakes, mostly very shallow and filled with black or coffee-coloured mud with an inch or two of brackish water upon it. Some of these pools are covered with aquatic plants; and others are open water. These lakes and pools seem to be the real point of attraction; and on their edges the Little Stints feed, in small flocks of from half a dozen birds to a score, as they happen to meet from the tundra. The large flock of perhaps a hundred or more birds, which was occa-

sionally seen, might possibly have been last year's birds and not breeding; but more probably it consisted entirely of males, which, so far as we had an opportunity of observing, do not take any part in incubation. The ground where the nests were placed was full of tussocks or hummocks, close together, the swampy ground between being almost hidden, or traceable only by rows of cotton-grass. The tussocks are covered with green moss, with now and then a little reindeer-moss; but this undergrowth is almost hidden with cloudberry, a few species of *Juncus*, and sundry *Carices*, with occasionally a few dwarf shrubs and flowers of the tundra. The nests were within a hundred yards of the place where I shot the five Little Stints on the 14th July, on a comparatively dry extent of tundra, gently sloping towards the north-east, lying between the lagoon and the inland sea—exactly the place that one would expect them to breed in, not too swampy, but probably the coolest place the birds could have chosen. The Pytkoff Mountains, though at a considerably greater elevation (513 feet above the level of the sea), are, no doubt, warmer, because more inland. The sandy shore, having little or no cover, would also be hotter from the sun. Facing the north-east, this part of the tundra catches the most of the prevailing winds at this season of the year, and the least sun; and no doubt the large bay or inland sea on one side, and the open water on the other, help to cool the air. The choice of a breeding-place bears only a secondary relation to latitude, longitude, or elevation. It is inaccurate to state that at the westerly or southerly limit of their distribution birds breed at the greatest elevation. This may or may not be the case, according to circumstances. The whole question is doubtless one of temperature; and the true statement of the case must be, that at the *warmest* limit of their distribution birds choose the *coolest* locality in which to breed—a statement which almost amounts to a platitude, but one, nevertheless, that cannot be too constantly remembered by field-naturalists in search of undiscovered breeding-grounds.

“Our next nest was taken on the 24th of July. Harvie-Brown and I had been up all night, shooting by the light of the midnight sun, hoping to avoid the mosquitoes, and were returning home to our wrecked ship in a thick white morning mist. I stopped behind to refresh myself with a bathe, and afterwards turned towards the Little-Stint ground. Just as I reached it I was glad to see Piottuch emerge from the white mist, with the intelligence that he had found another nest of the Little Stint, containing four eggs, about three versts off, and had shot the bird, leaving the nest and eggs for us to take. We walked on together a short distance, when I heard the now familiar cry of a Little Stint behind me, a sharp *wick*, almost exactly the same as the cry of the Red-necked Phalarope or that of the Sanderling. Turning quickly round I saw the bird flying past as if coming up from its feeding-grounds. It wheeled round us at some distance and alighted on the ground about eighty yards ahead. We walked slowly up towards it, and stood for some time watching it busily employed in preening its feathers. By-and-by we sat down. It presently began to run towards us, stopping now and then to preen a feather or two. Then it turned back a few paces, and lifting its wings settled down, evidently on its nest. We gave it three minutes' grace, to be quite sure, and then quietly walked up to the place, and sat down, one on each side of the eggs. The bird as quietly slipped off the nest, and began to walk about all round us, now and then pecking on the ground as if feeding, seldom going more than six feet from us, and often approaching within eighteen inches. It was a most interesting and beautiful sight. The tameness of the bird was almost ludicrous. We chatted and talked;

but the bird remained perfectly silent; and did not betray the slightest symptom of fear or concern, *until I touched the eggs*. She then gave a flutter towards me, apparently to attract my attention. I turned towards her, and she resumed her former unconcern. I stretched my hand towards her. She quietly retreated, keeping about two feet from my hand. She seemed so extremely tame that I almost thought for the moment that I could catch her, and getting onto all fours I crept quietly towards her. As soon as I began to move from the nest, her manner entirely changed. She kept about the same distance ahead of me; but instead of retreating, with the utmost apparent nonchalance she did every thing in her power to attract me still further. She shuffled along the ground as if lame. She dropped her wings as if unable to fly, and occasionally rested on her breast, quivering her drooping wings and spread tail, as if dying. I threw one of my gauntlets at her, thinking to secure her without damage, but she was too quick for me. Piottuch then fired at her and missed. He followed her for some distance; but she kept just out of range, and finally flew away. We waited about a quarter of an hour at the nest, talking and making no effort to conceal ourselves, when she flew straight up and alighted within easy shot, and I secured her. The Little Stint seems to be a very quiet bird at the nest, quite different from Temminck's Stint. When you invade a colony of the latter birds, especially if they have young, the parents almost chase you from the spot—flying wildly round and round, and crying vociferously, often perching upon a stake or a tree, or hovering in the air and trilling. We observed none of these habits in the Little Stint. So far as we saw, only the female takes part in incubation, and only the female is seen near the nest. On our way back to the wreck we met with a party of Sanderlings on the shore, and shot two of them. No doubt these birds were breeding somewhere in the district. After a good dinner of Willow-Grouse and a siesta of three hours, we started to take the nest that Piottuch had marked. Whilst we had slept, the weather had changed. The mosquitoes had all gone. A smart gale was blowing from the north, and a heavy sea was breaking on the shore. It was cloudy, and dark, and cold, with an attempt now and then at rain. The nest was a couple of miles off, very near the shore of the inland sea, but on somewhat similar ground—moss, cloudberry, grass, &c. The eggs were intermediate in colour between those of the other two nests. On our return to our quarters we found that our Samoyede servant had caught a young Little Stint, halfgrown, a very interesting bird. Like the young of the Dunlin, the first feathers are those of summer plumage. On comparing the young in down and halfgrown birds of the Dunlin with those of the Little Stint, we noted that the legs of young Dunlin in down were pale brown, whilst those of the halfgrown and mature birds were nearly black; the Little Stint, on the other hand, seems to have nearly black legs and feet at all ages.

“The Little Stint is evidently much more nearly allied to the Dunlin than to Temminck's Stint, and ought to be called the Little Dunlin. The birds are very similar in colour. The eggs of the Little Stint can hardly be mistaken for those of Temminck's Stint, but are in every respect miniature Dunlin's eggs. The young in down of Temminck's Stint are quite grey compared with the reddish brown of the young of the Dunlin. The young in down of the Little Stint are still redder, especially on the sides and the back of the neck. On the 27th July Harvie-Brown walked over to the other side of the little inland sea, and found two more nests of the Little Stint, each containing four eggs. These nests were on different ground. They were not on the

tundra properly so called, but on the feeding-ground, flat land covered with sand, upon which short grass and bunches of a thick-leaved yellow-flowered plant were growing, abounding also with little lakes and pools. The real tundra is about 150 yards from the water's edge in this place; and the feeding-ground lies between, scattered over with drift wood of all sorts. The behaviour of the birds at these two nests was exactly the same as at the previous ones.

"The average size of the twenty eggs we obtained of the Little Stint is about  $1\frac{1}{16} \times \frac{3}{4}$  inch, a trifle smaller than the eggs of Temminck's Stint usually are. The ground-colour varies from pale greenish grey to pale brown. The spots and blotches are rich brown, generally large, and sometimes confluent at the large end. They probably go through every variety to which Dunlins' eggs are subject. All the Little Stints' eggs which we found, with one exception, which would probably be a barren one, were very much incubated."

I am indebted to Mr. Seebohm for the specimen of the Little Stint in down, figured together with the young in down of the Dunlin and Temminck's Stint. From this Plate it will be seen that in this plumage the Little Stint far more closely resembles the Dunlin than Temminck's Stint, differing only in having the hind neck lighter and more yellowish buff and the lower throat and breast washed with ochreous buff, the fore part of the crown and forehead also being washed with rufescent buff. The specimen in question was obtained at Dvoinik, on the 22nd of July, 1875.





LITTLE STINT.  
TRINGA MINUTA

45

TEMMINCK'S STINT.  
TRINGA TEMMINCKI

# TRINGA TEMMINCKI

(TEMMINCK'S STINT.)

*Tringa pusilla*, Lath. Ind. Orn. ii. p. 737 (1790, nec Linn.).

*Tringa temminckii*, Leisler, Nachtrag zu Bechst. Naturg. Deutschl. ii. p. 75 (1811).

*Pelidna temminckii*, Boie, Isis, 1826, p. 979.

*Leimoneites temminckii*, Kaup, Natürl. Syst. p. 37 (1829).

*Temminck's Stint*, *White-tailed Sandpiper*, English; *Bécasseau Temminck*, French; *Pioranello nano*, Italian; *Temminck's Strandläufer*, German; *kleinste Strandlooper*, Dutch; *Temminck's Strandløber*, Danish; *Temminck's Strandvipa*, Swedish; *Temminck's Strandvibe*, Norwegian.

## Figuræ notabiles.

Temm. Pl. Col. v. pl. 41. fig. 1 (1823); Naum. Vög. Deutschl. vii. Taf. 189; Gould, B. of Eur. iv. pl. 333; Yarr. Brit. B. ii. p. 647; Kjærb. Orn. Dan. Afb. xxxv. p. 4; Schl. Vog. Nederl. pl. 234; Sundev. Svensk. Fogl. pl. xliii. fig. 5; Fritsch, Vög. Eur. tab. 38. fig. 12. Gould, B. Gr. Br. part xvii.

♂ *æstiv.* suprâ grisescens, plumis medialiter nigris rufo marginatis: fronte et supercilio antico cum genis albidis, his posticè rufo tinctis: tectricibus alarum minimis saturatè brunneis, medianis et majoribus magis grisescens, his albedo terminatis fasciam alarem distinctam formantibus: remigibus brunneis versus apicem nigricantibus, rhachidibus brunneis, remigis primi rhachide albâ exceptâ; secundariis minoribus albo terminatis, pennis dorsalibus longissimis grisescens-brunneis: caudâ albâ, rectricibus quatuor centralibus brunneis exceptis, pennâ extimâ albâ, duabus proximis plus minusve cineraceo notatis: subtùs albus, pectore summo paullò cinerascens vix rufescens, lineis brunneis longitudinaliter notato: rostro nigricante: pedibus flavo-brunneis: iride saturatè brunneâ.

♂ *hiem.* suprâ griseo-brunnescens, dorso postico et uropygio nigricantibus: fronte genisque albicantibus: tectricibus alarum dorso concoloribus, majoribus albo marginatis, fasciam alarem distinctam formantibus: remigibus et caudâ ut in ptilosi æstivâ coloratis: subtùs albus, pectore summo grisescens-brunneo.

♂ *juv.* grisescens-brunnescens, corporis superioris plumis marginibus fulvescentibus variis, subtùs albus, pectore summo grisescens-brunneo.

*Summer plumage.* Upper surface dark greyish brown, with obscure blackish centres to the feathers, giving a mottled appearance, most of the feathers edged with rufous; forehead and feathers in front of the eye and cheeks whitish, indistinctly streaked with brownish; feathers between the bill and the eye, ear-coverts, and sides of the neck brown, with a rufous tinge, and streaked with darker brown; least wing-coverts dark brown, and greater and median coverts rather paler, with obscure edgings of grey or rufous, the greater ones tipped with white, forming an alar bar; quills blackish brown, the shafts brown, excepting that of the outer feather, which is white, the small secondaries edged near the base and conspicuously tipped with white, the long ones glossy greenish brown with rufous edgings; tail almost

entirely white, the outermost feather wholly so, the next white, with the exception of a shade of ashy near the tip of the outer web; and this increases in amount as we approach the two centre feathers, which are greenish brown, the quill on each side being entirely ashy brown; under surface of the body whitish, the fore part of the breast ashy with a strong tinge of rufous, and slightly mottled with darker brown; under wing-coverts white, the small ones round the bend of the wing brown with narrow edgings of white, the greater ones ashy grey; bill blackish; feet light brown; iris dark brown. Total length 5·6 inches, culmen 0·7, wing 3·75, tail 1·9, tarsus 0·65.

*Young male in autumn.* Above greyish brown, with buff edgings to the feathers, each dorsal plume being margined with this colour, and also with an inner line of black, as well as a black shaft, these yellowish edgings being especially plain on the head and wing-coverts; the sides of the face and hinder neck are greyish; the lores and cheeks slightly inclining to whitish; the quills, as in the adult bird, tipped and edged with white in the same manner, though the latter colour is slightly tinged with buff, with which also the inner secondaries are edged; under surface of the body whitish, the chest ashy grey, with a slight tinge of buff.

*Winter plumage.* Above entirely greyish brown, slightly glossed with green, with no black centres to the feathers, beyond a narrow line of black down the shaft, so that the upper surface of the body appears to be uniform greyish brown; lower part of the back and rump darker and more blackish; wings as in summer, but without any rufous edgings to any of the feathers; sides of the face and neck also greyish brown; the lores and cheeks being whitish with narrow streaks of brown: under surface of the body white, the fore part of the breast ashy brown, slightly varied with white in the centre.

*Explanation of the Plate.* The figures represent a Temminck's Stint in full winter plumage, and a Little Stint in autumnal dress, not in full winter garb, as it is very seldom that one in complete winter plumage is met with in Europe. It may always be told from the present species by its white-shafted quills and ashy tail-feathers.

IN the western countries of Europe Temminck's Stint is of rarer occurrence than the Little Stint; but, unlike that species, it breeds within European limits, and is indeed in some countries no rarer than that species. Its winter home is found in the south of Europe and N.-E. Africa, and more particularly in India and China.

In Great Britain it is generally looked upon as a rare bird; and most of the local lists can only reckon one or two instances of its occurrence; it is as yet only known to have been procured once in Ireland; and we are unaware of any instance of its capture in Scotland. Regarding its occurrence in Norway, our friend Mr. Robert Collett writes:—"It occurs more frequently, probably, near Christiania, than has been supposed, and, although it does not breed so far south, it is found on the coast from the middle of May into the month of June. Late in August they appear again, but are not so numerous as in spring." In Sweden, according to Nilsson, although the larger number go up to the high north to breed, still a few remain in the southern and eastern parts of Central Sweden. At Mörkö, in Södermanland, it has been seen and shot in pairs both in the early part and also the middle of May; and in the middle of August families of young birds have been observed. On the shores of Ostergöthland pairs have also been noticed on the 22nd of May. Near Gothenburg it is often met with in the summer, and is supposed to breed there. At Karesuando it is numerous in the spring. It is found on most of the mosses on the fells, though not numerous.

Wheelwright states that it was rare at Quickjock, in Lapland; but on the Varanger Fjord it is said by Pastor Sommerfeldt to be common in summer. Meyer records it as common in Livonia during the migration in August and September; and it is also plentiful in Germany at the same seasons. In Belgium, according to De Selys-Longchamps, it is found in spring and autumn on the coast, and accidentally on the Moselle. Professor Schlegel says that in Holland it is found in autumn in flocks of from ten to twenty individuals; but Mr. H. M. Labouchere writes:—"Temminck's Sandpiper is still more rare in Holland than *Tringa minuta*, and there are very few instances on record of this bird having been seen there." Degland and Gerbe record the present species as occurring regularly in the north and south of France, where it appears in spring and autumn amongst flocks of Dunlins and Little Stints; and Jaubert and Barthélemy-Lapommeraye say that it passes through Provence in September in small numbers, and again in April and May, later thus than the Little Stint. Bailly says that it occurs in Savoy during migration. It is not uncommon near Gibraltar, as Major Irby informs us; and he has given us two specimens in full winter plumage. In Portugal, Professor Barboza du Bocage also states that it is not rare. Loche observes that it is common in winter in Algeria; and Canon Tristram found it in the desert of the Sahara. Mr. C. A. Wright has procured it in Malta both in breeding- and in winter plumage. In Italy Savi records it as occurring during migration; and according to Von der Mühle it "remains in Greece throughout the winter, some being found in May, and even in June." Mr. Robson, of Ortakeuy, writes that he has shot this species during the autumn migration on the muddy shores of the Khat-hane, in Turkey in Europe. Near Smyrna it was procured in winter by the late Mr. H. E. Strickland. Professor von Nordmann observed this Stint at Salghir and Kara-sow and the southern coast of the Crimea in May, July, and early in August, and believes that it breeds there. It is rare near Odessa, as also in all New Russia. Dr. v. Middendorff says that it breeds both on the Taimyr river, as also on the Boganida, in the Stanowoj mountains, near Udschoj-Ostrog, and on the island of Aehaé, although everywhere rarer than *Tringa minuta*. Dr. Radde procured examples on Lake Baikal in July, and early in and about the middle of May shot two females on the Tarei-nor, which did not differ from specimens from Southern Russia. He first observed them on the Tarei-nor on the 1st and 2nd of May in small flocks, and on the 5th of that month they were numerous. On the central Irkut he observed the first on the 6th of May 1859. On the 30th of July they were in flocks near Altansk, and from the 5th of August flocks were observed on the Tarei-nor until the 2nd of September, after which none were seen. According to von Schrenck this species appears in Eastern Russia comparatively early in the spring. Mr. Maack observed them first on the Schilka, near the village of Bjankina, on the 7th (19th) of May. One example then procured still retained most of the winter plumage, whereas the other was nearly in summer plumage; a third, procured further down the Schilka, at Schilkinskoi Sawod, on the 11th (23rd) of May was intermediate between the two above referred to as regards plumage.

In winter Mr. Swinhoe states that it is found throughout China, being common in South China at this season of the year on the banks of inland lakes and marshes. He has also procured it in Formosa, where it is a common winter visitant. Captain Blakiston has met with it in Northern Japan. Mr. Blyth records it as very common in India in winter, though, according to Dr. Jerdon, not occurring in such numbers as the Little Stint. In Egypt Dr. Leith Adams did

not see the present bird above Cairo, but found it plentiful about Alexandria and in the Delta. Captain Shelley has procured several specimens; and Mr. E. Cavendish Taylor also obtained it in that country. In N.-E. Africa Von Heuglin collected it as far south as  $10^{\circ}$  N. lat. Petherick procured it in Cordofan; and it has even been stated to occur in Senegambia, on Lichtenstein's authority.

In its general habits the present bird bears considerable affinity to the Little Stint, and is generally found in small flocks on the sea-coast, or marshes near the sea-shores, in company with that species and such other waders as Dunlins and Redshanks, but never in flocks of any magnitude. It is extremely active, and appears to be always on the move, running about along the edge of the water in search of food. He also found it in the early spring in Finland, observing it almost daily in small flocks on the shores of the Gulf of Bothnia. At Uleåborg he observed the first flocks about the middle of May. They were then in small companies of from six to nine individuals, most of which appeared to have donned the full nuptial plumage. For about a fortnight they remained about the shores of the Gulf, or the banks of the small lakes near the sea, were very tame, and if not fired at could be approached within a few yards; and then by degrees they paired off and disappeared to their various breeding-stations. In running about in search of the small insects, gnats, &c. on which they feed, they moved with great activity, the head drawn rather close into the body; and when they rested for a moment they would, like many of their allies, move the head backwards and forwards several times. The note is shrill and cricket-like, but pleasant, and somewhat resembles the word *Tirrii* several times repeated. The flight is very swift, but peculiar, and almost like that of a butterfly. Dresser found it breeding on the islands outside Uleåborg, and gave the following notes on its nidification to Mr. Gould, who inserted them in his 'Birds of Great Britain':—"I found Temminck's Stint breeding sparingly among the network of islands surrounding the harbour of Uleåborg, and shot several in full breeding-plumage on the 26th of May. They were then still in flocks; and I endeavoured, unsuccessfully, to find some specimens of *Tringa minuta* amongst them. I spent the 12th of June on the islands outside of Uleåborg, looking for nests, and found one of this bird on Akkio Island. Both I and the lad who accompanied me saw the old birds as soon as we landed, and at once commenced a regular search for the nest, but did not succeed in finding it until we had carefully gone over the whole of the ground. It was situated near the middle of the island, some twenty or more yards from the shore; and being placed where the grass was thick, it was not seen till almost trodden upon. It was a mere hollow in the earth, such as might be made by working the large end of a hen's egg in soft soil, with small hay-straws neatly arranged round the inside, and contained four eggs, all placed with the pointed end towards the centre. Both birds were very fearless, and did not go from the nest, but every now and then flew up in the air and descended again in circles, fluttering like a Skylark, uttering at the same time a peculiar churring sound, which they also emitted while sitting on any elevated place. A favourite perch of one of them was a pole which had been set up for a pilot's mark, but had been broken off about eight feet from the ground; on this the bird would sit for a quarter of an hour at a time, churring all the time, and would allow me to approach within a few feet of it."

The following note, written by the late Mr. John Wolley, was communicated by that gentle-

man to Mr. Hewitson's work on British birds' eggs:—"I have found it breeding in several localities north of the Bothnian gulf; but it is scarce, and, as far as I have seen, confined to a few favourite spots. Grassy banks and pastures by the water-side are the kind of places where it takes up its breeding-quarters; and it seems to like to be near houses. Nothing can be more interesting or pretty than this little bird in the early part of summer; it is so tame that one could often catch it in a net at the end of a stick. At one time it is hovering with its wings raised over its back, or floating about, and it reminds one rather of some insect than any other bird; at another time it may be standing on the top of a stone or stake, or the gable end of a cottage; and whether hovering or standing on its perch, it utters a constant trilling note, of which I can best give an idea by saying that it brought to my recollection the Grasshopper Warbler, though the resemblance is perhaps slight. When its eggs are very near, it sometimes runs about one's feet, and, though it cannot but be anxious, it seems as busy as ever, picking gnats and other insects off the grass. One nest which I found, was a short stone's throw from a cottage where children were playing about in all directions; another was only a pace or two from a spring from which women drew water every day, and passers by often stopped to drink. The nest is very simple—a few short bits of hay, a little saucer-shaped hollow, placed amongst thin grass or sedge, generally not far from the water's edge, but sometimes in the middle of a meadow. The eggs were laid this year (1854) about Midsummer day."

Mr. J. H. Gurney, jun., has sent us the accompanying original note on the habits of the present species:—"On the 4th of October 1871, I observed a Temminck's Stint at Kingsbury, at some small roots, on the left-hand side of the end of the reservoir. As I had no gun to shoot it, I did the next best thing, in observing its habits. Its appearance was more that of an insect than a bird; and it was so much the colour of mud that, if I only took my eye off it for an instant, I was in danger of losing it, being very hard to see, except when its reflection fell on the still margin of the water. It never fed but on the mud; and then in a stooping attitude, with its tail rather high, it jerked rapidly to the right and left, appearing rather to touch the mud than to probe it. That its food is very minute I can well believe, as it pecked something every second; but the consumption must be enormous if it swallows every time, and the digestion no doubt correspondingly rapid, as testified by the mutings at the edge of the water, which were white and numerous. When it ran off the mud, it kept making little pauses, which it had not done when feeding, except when it saw me surveying it through my glasses. It exhibited no fear when people passed it, only flying up and settling again. A Titlark feeding near caused it no alarm. Once a Pied Wagtail went up to it, and stared as if at a stranger; but the Stint took no notice. Its pace was slow, except when I approached too near, when it ran very quickly. Once I saw it wade into the water to wash itself. It went in as far as it could do without wetting its breast, and then began by straining its neck and preening the upper part of the breast. On landing again it preened the back and wing, commencing with the right side. The operation took about five minutes. It was the only time I saw it desist from feeding. I never saw the ends of the wings droop below the tail: their tips just seemed to cross above it; neither did I see it rest upon one leg, with the other one partly drawn up—an attitude in which Sandpipers are often represented. Once or twice it gave its head a little shake in the air, and occasionally when probing it did so, to get rid, I imagine, of any foreign substance which adhered to the beak.

All around the edge of the soft mud was dotted with its foot-prints. The length of the print (*i. e.* of the middle toe and sole) was nearly one inch, its breadth rather more. Small indeed were they when compared with the great tracks of the Heron. Its flight much resembles that of a Common Sandpiper, as it skimmed along with drooping wings, flying low over the water. It always spread its tail, which showed very white. On first rising its legs hung down; and it elevated its wings in the act of alighting. Its little bill was pointed downwards. The rate of flight was slow when not frightened; but once it made a bold sweep, taking a high circuitous course, and crossing the walled embankment at the end of the reservoir. After a few minutes it returned and uttered, for the first time, a twittering note, which I shall not mar by attempting to imitate in letters. At half-past one a second bird passed, flying very quickly, but, seeing me, went on beyond the embankment. It was followed by the first, which, in its turn, was chased by a Swallow."

We have before us sixteen eggs of this Stint, from Dresser's collection, taken by himself in Finland and by Wolley's collectors in Lapland, which vary but little in size, the largest measuring  $1\frac{4}{10}$  by  $\frac{3}{40}$  inch, and the smallest  $1\frac{3}{40}$  by  $\frac{3}{40}$ . In shape they are, like all the eggs of this tribe, pear-shaped, and in colour pale stone-coloured, sometimes pale greenish, covered with purplish brown underlying shell-markings, and dark reddish brown overlying surface-blotches, which often collect at the larger end. Dr. E. Rey writes to us that the average size of fifty eggs from Lapland, in his collection, is 27.9 by 20.4 millims., the largest measuring 28.75 by 21.5, and the smallest 26.5 by 19.5 millims. respectively. The breeding-season appears to be from the 24th to the 30th of June, and the number of eggs always four.

The description and figure of the breeding bird are taken from a specimen shot by Dresser himself near Uleåborg, in Finland. The figure of the bird in winter plumage is drawn from an example in Mr. J. E. Harting's collection, obtained by Mr. Swinhoe at Amoy, in November 1866, while this stage of plumage is described from a Spanish specimen given us by Major Irby. For the young bird which forms the subject of the description we are indebted to Mr. W. Meves.

In the preparation of the above article we have examined the following specimens:—

*E Mus. Sharpe and Dresser.*

*a*, ♀. Near Uleåborg, Finland, May 26th, 1861 (*H. E. Dresser*). *b*, ♀. Juckasjärvi, Lapland, May 24th, 1849 (*A. Malm, e dono C. J. Sundevall*). *c*, ♂ *juv.* Oland, August 20th, 1869 (*W. Meves*). *d, e.* Near Gibraltar, February 14th, 1871 (*L. H. Irby*).

*E Mus. J. E. Harting.*

*a.* Amoy, November 1866 (*R. Swinhoe*).

*E Mus. J. H. Gurney, jun.*

*a.* Pagham, Sussex, September 3rd, 1869 (*R. B. Sharpe*).

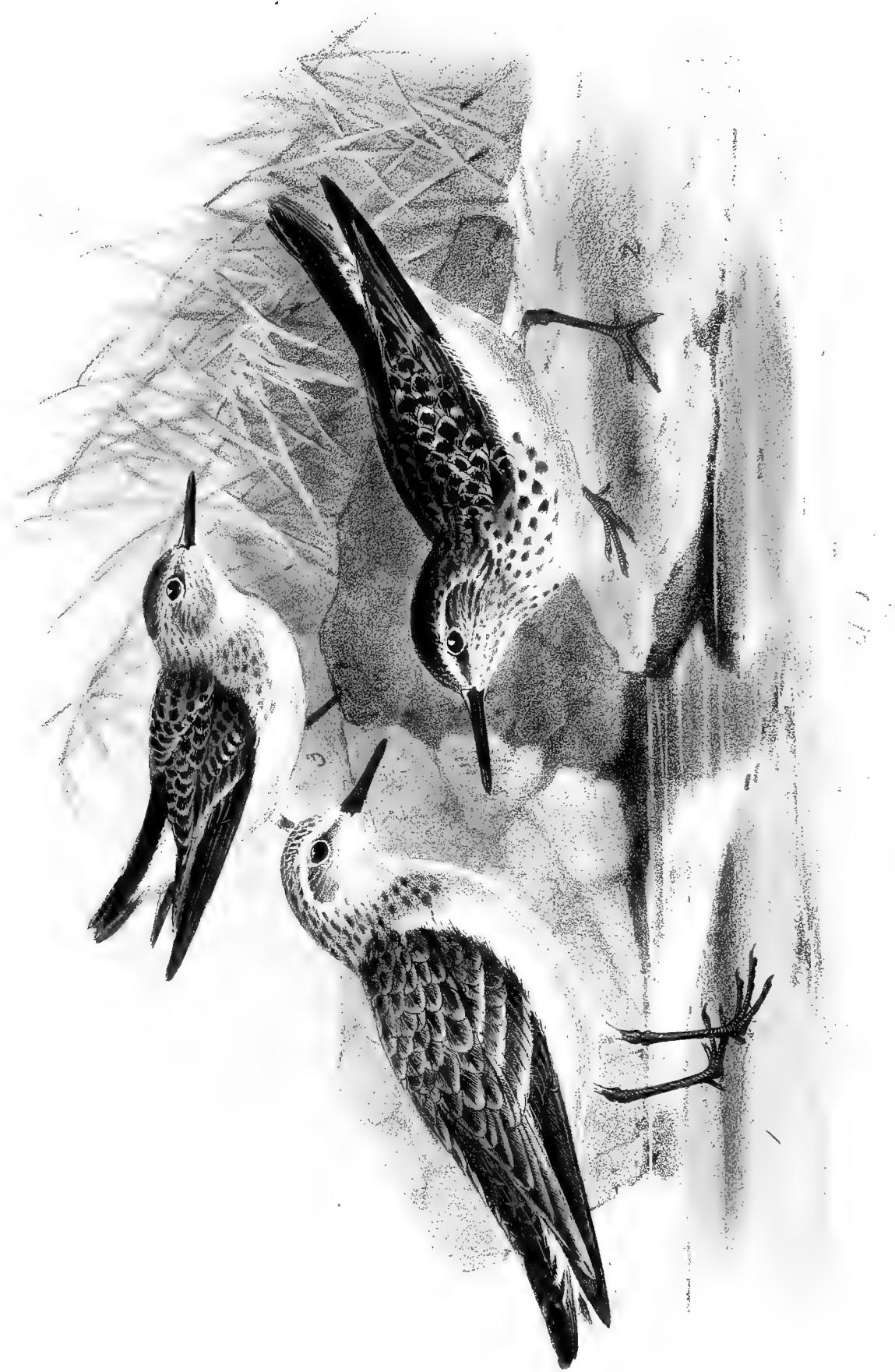
*E Mus. R. Swinhoe.*

*a.* Amoy, December 25th, 1857, and February 12th, 1858 (*R. S.*). *b, c, d.* Amoy, January 1867 (*R. S.*).

*E Mus. Lord Walden.*

*a.* N.-W. India. *b.* Maunbhoom, January 1865 (*R. C. Beavan*). *c.* Umballah, November 1866 (*R. C. Beavan*).





1. LITTLE STINT.  
TRINGA MINUTA

2 & 3 AMERICAN STINT.  
TRINGA MINUTILLA

## TRINGA MINUTILLA.

(AMERICAN STINT.)

*Tringa pusilla*, Wilson, Am. Orn. v. p. 32, pl. 37. fig. 4 (1813, nec Linn., nec Meyer, nec Wolf, nec Bechst.).

*Tringa minutilla*, Vieill. N. Dict. d'Hist. Nat. xxxiv. p. 452 (1819).

*Chorlito pestorejo pardo*, Azara, Apunt. iii. p. 322 (1803).

*Tringa fuscicollis*, Bonn. et Vieill. Enc. Méth. iii. p. 1088 (1823, ex Azara).

*Tringa campestris*, Licht. Verz. Doubl. p. 74 (1823).

*Tringa wilsoni*, Nuttall, Man. Orn. ii. p. 121 (1834).

*Pelidna pusilla*, Bonap. Comp. List B. Eur. & N. Am. p. 50 (1838).

*Tringa nana*, Licht. Nomencl. Av. p. 92 (1854).

*Actodromas wilsoni*, Cass. B. N. Am. p. 721 (1858).

*Actodromas minutilla*, Coues, Pr. Philad. Acad. 1861, p. 191.

*Sandpiper, Sandpeep, Peep, Stint*, English (*Elliot Coues*).

*Figurae notabiles.*

Wilson, Am. Orn. pl. xxxvii. fig. 4; Audubon, B. of America, pl. 337.

♂ *ad.* suprâ nigricans, pilei dorsique plumis paucis vix rufescente aut fulvescente limbatis: fronte et supercilio albicante: collo postico magis fulvescente lavato: tectricibus alarum brunneis cinerascete lavatis et extûs angustè fulvescente limbatis, majoribus albo apicatis, fasciam alarem formantibus: remigibus saturatè brunneis, ad apicem nigricantibus, scapis rectricum albicanti-brunneis, scapo primarii externi purè albo, apicem versus brunnescente, pennis minoribus albido terminatis, secundariis longis extûs rufescente marginatis: caudâ pallidè cinerasceti-brunneâ, rectricibus duabus mediis paullò elongatis exceptis saturatè brunneis: facie laterali albicante, brunneo minutè maculatis, regione paroticâ rufescente lavatâ: gulâ albâ: pectore cinerascete, rufo lavato, plumis medialiter brunneo notatis: corpore reliquo subtûs albo: subalaribus albis, tectricibus marginalibus brunnescente variis: rostro nigricanti-brunneo: pedibus pallidè flavicanti-brunneis: iride saturatè brunneâ.

♀ *mari simillima.*

*Av. hornot.* similis adultis, sed capitis et dorsi plumis distinctè rufescente marginatis: collo postico cinerascete: scapularibus fulvo limbatis: dorso postico et uropygio nigricantibus: tectricibus alarum et secundariis pallidè rufescente marginatis: alis et caudâ ut in adultis coloratis: loris albidis: supercilio distincto nullo: facie laterali cinerasceti-albâ, maculis brunnescentibus notatâ: gutture albo: pectore superiore brunnescente, lineis paucis saturatè brunneis vario: corpore reliquo subtûs albo: subalaribus ut in adultis coloratis.

♂ *hiem.* suprâ cinerascens, plumis medialiter saturatè brunneis et albido marginatis: tectricibus alarum dorso concoloribus, angustè albido marginatis: loris et supercilio distincto albis: facie laterali albicante,

distinctè brunneo striatâ: gutture albo: pectore superiore cinerascente, plumis medialiter saturatè brunneis: corpore reliquo subtùs albo.

*Adult Male in breeding-plumage.* Above blackish, a few of the feathers on the head and back slightly edged with rufous; hinder part of the neck inclining to ashy, varied with fulvous, and slightly washed with rufous; wing-coverts rather more ashy grey, externally margined with rufous or whitish, the greater coverts narrowly edged with white, forming an indistinct alar bar; quills ashy brown, becoming blacker towards their tips, the shafts whitey brown, with the exception of the outermost quill, which has the shaft white, inclining to brownish only towards the tip, the short quills indistinctly tipped with whitish, and the long secondaries washed on their outer web with rufous; lower part of the back and rump deep black; tail very pale ashy-grey, the two middle tail-feathers, which are rather longer than the rest, blackish, like the rump; lores and an indistinct eyebrow whitish; sides of the face also whitish, slightly varied with minute spots of brown, the ear-coverts being washed with rufous; throat white; chest ashy, mottled with marks of dark brown in the centre of some of the feathers; rest of the under surface of the body white; under wing-coverts whitish, some of the lower ones, as well as those along the margin of the wing, being mottled with brown; bill blackish brown; feet light yellowish brown; iris dark brown. Total length 4·7–5·5 inches, culmen 0·7–0·8, wing 3·3–3·45, tail 1·5–1·6, tarsus 0·7.

*Female.* Does not differ materially from the male.

*Male in winter plumage.* Ashy grey above, some of the dorsal feathers dark purplish-brown in the centre and margined with whitish; lower part of back and rump blackish; wing-coverts coloured exactly like the back, the greater coverts clearer brown, and indistinctly tipped with white; wings and tail coloured as in summer; lores and an indistinct eyebrow whitish; sides of the face dull white, the feathers in front of the eye, cheeks, and ear-coverts marked with brown; throat white; chest ashy brown, with a dark brown centre to a few of the feathers; rest of the under surface of the body white, the under wing-coverts as in summer.

*Young Male in autumn plumage.* Blackish, the head and back varied with rufous markings to the feathers, some of the dorsal feathers and the scapulars edged with whitish; lower back and rump black; hinder neck greyish, somewhat mottled with dark brown centres to the feathers; inner wing-coverts conspicuously margined with pale rusty fulvous; quills and tail-feathers, as also the facial features, as in the adult; under surface of the body white, the chest pale greyish-brown, some of the lateral feathers of the breast mottled with dark brown; bill blackish; feet clay-brown; iris dark brown.

*Obs.* The chief differences between this species and the European Little Stint have already been stated by us in our review of this section of the *Tringinae*; but we there omitted to state one very salient point of distinction, which consists in the colour of the legs: in *T. minuta* they are black, in *T. minutilla* light yellowish-brown. Further, the American Stint is much smaller in size and blacker in colour, while its bill, being about the same size as that of *T. minuta*, has the appearance of being abnormally long.

*Explanation of the Plate.* The illustration on the right-hand side of the Plate represents the American Stint in breeding-dress, while the hinder figure is that of a young bird in its first autumn plumage. On the left we have given a portrait of *Tringa minuta* in full winter plumage.

THE present species has occurred twice in England; and we are indebted to Mr. Harting for the following note as to its capture in this country (from his 'Handbook of British Birds,' just

published):—"One, Marazion Marsh, Cornwall, 10th Oct. 1853: Rodd, Zoologist, 1854, p. 4297; Yarrell, Hist. Brit. Birds (preface to 3rd edition). In the collection of Mr. Vingoe.—One, Northam Burrows, Devon, Sept. 1869: Rodd, The Field, 23rd Oct. 1869; Zoologist, 1869, p. 1920; Rickards, Zoologist, 1870, p. 2025. In the collection of Mr. Rickards\*."

We cannot congratulate ourselves sufficiently on having obtained for the present work the cooperation of our friend Dr. Elliot Coues, who by his excellent contributions has enabled us to give such good accounts of all the American birds which are rare visitors to Europe. We subjoin the following notes which he has kindly sent us on the present species:—

"The distinction of this bird from *T. minuta* may be regarded as established. When I handled the subject in 1861, my material was insufficient, and some doubts lingered until recently; but the difference in size I then noted has been confirmed, and other characters added, by yourselves, in the very satisfactory analysis of the group that you kindly submitted to me in advance of its publication. There is no question, moreover, of the applicability of Vieillot's *T. minutilla* to the ordinary North-American bird; and, after examining specimens from all parts of the continent, to be counted by scores if not by hundreds, I have seen nothing indicating a second species. In fact, I regard the matter of *T. fuscicollis*, Vieill., as the only technical question of American Stints left open. I am not able to settle it authoritatively, not having compared skins from Vieillot's locality; but all that we know of the distribution, and particularly the migrations, of *T. minutilla* is against the probability that *T. fuscicollis* is distinct. Should it prove identical, we shall have a case that simply tallies with the usual distribution of the smaller American Grallæ, the greater number of them being common to both divisions of the hemisphere.

"The range of this little Stint is so nearly coincident with the whole extent of North America that there is no occasion to particularize localities; indeed I scarcely think one could cover with his finger a spot of the map, in the neighbourhood of water, that it never visits, unless it be along the uttermost polar line. We know the species as an Antillean and Central-American bird in winter; and when *Tringa fuscicollis* is found out, a still more tropical range, during a part of the year, will probably be demonstrated. We may therefore pass at once to the consideration of its migrations, the immense extent of which is not the least interesting item in the bird's history. The broad statement that throughout the United States (what *was* the United States before Russian America was annexed, to the great inconvenience of ornithologists!) this Stint is a bird of passage requires little qualification, and that entirely on account of its winter range to the southward. We can gather from the rather meagre advices from our southern border that a number of birds pass the winter there, though unquestionably the greater part leave our shores for the Antilles and go down into Mexico. For example, it is reported as 'common' in Florida in winter (Maynard, apud Allen, Bull. Mus. Comp. Zoology, ii. p. 356); and it occurs at the same season in South Carolina (nobis, Pr. Bost. Soc. 1868, p. 122), though far less numerous than during the passage. In North Carolina, however, where I paid particular attention to the water-birds whilst living on the sea-shore for a couple of years, I never saw it

"\* Mr. Rickards kindly brought this specimen to London, shortly after he had skinned it, in order that I might see it. We compared it with skins in my collection from North and South America and the West Indies, and were satisfied of its identity with Wilson's species."—J. E. H.

between November and March. In Arizona I met with none after October (Pr. A. N. S. Phil. 1866, p. 61); but they were plenty, with the Semipalmated Sandpipers (*Ereunetes pusillus*), at San Pedro, in Southern California, in November (Ibis, 1866, p. 269). Just how far north they can spend the winter comfortably, I do not know, but presume this is a matter of temperature, and that some linger wherever the ground does not become too hard with the cold for them to secure the soft animal substances they feed upon.

“However the case may stand in this respect, it is pretty certain that the Stints leave the United States as one bird in the spring. I cannot point to a single recorded instance of their breeding within our northern boundary. If they stopped to nest anywhere it would be on the northern part of New England; and yet all the diligent bird-folk of that section speak of the Stints as birds of passage. For any thing that yet appears to the contrary, Mr. Allen is perfectly right in placing this species among those whose breeding-range is limited to the southward by the Hudsonian fauna. In the extremely valuable and interesting memoir already cited, Mr. Allen (p. 400) defines this fauna as follows:—‘Its northern limit seems nearly to coincide with the isothermal line of 50° F., its southern limit being the isothermal of 57°. . . . It will include at least the southern third of Labrador, the northern peninsula of Newfoundland, Anticosti Island, the more elevated parts of the bight of land separating the lowlands bordering Hudson’s Bay from the lowlands of the St. Lawrence and the Winnipeg district, and the basin of the Mackenzie’s from Lake Athabasca to a point considerably north of Fort Simpson, extending on the Mackenzie’s-river valley some distance within the Arctic circle, probably to the Arctic coast. Extending still westward, it embraces the valleys of Leard’s and Peel’s rivers, and probably the valley and adjoining lowlands of the Youkon, including the greater part of that portion of the territory of Alaska which is situated to the southward of the Arctic circle—in other words, the portion of Boreal America situated between the Canadian fauna and the barren grounds. . . . The Hudsonian fauna doubtless embraces outlying islands in the Canadian fauna, as the upper part of the White Mountains and the summits of some of the higher peaks of the Adirondacks.’ With these last, however, our bird can of course have nothing to do, being unable to climb mountains and so substitute elevation for latitude, as many of the Passeres do.

“But, from this northern *breeding-range*, we must not hastily conclude that the Stint is not seen during the summer in the United States. Such is its restlessness, and so swiftly are its flights accomplished, that long before the summer is over the birds that departed in May are again among us with the year’s broods, thronging the beaches, and the muddy estuaries, and all the watercourses of the interior. Where the July birds that I have seen even so far south as North Carolina came from, I cannot tell. In that locality all the troops of Sandpipers of this and other species are off by the 1st of June at the latest; yet in about six weeks (somewhere about the 10th of July) a few of the Stints and the Semipalmated are seen, and their numbers increase in August, though all these are in advance of the main body that comes in September. Can it be that they have nested in the Hudsonian fauna and come back in so short a time? As I have already said (Pr. A. N. S. Phil. 1871, p. 31) it is probable that these early comers are either those that led the van in the spring migration, or those that from some cause or other did not complete their migration or raise a brood. Another curious fact may be noted here. In July 1860 I found

plenty of the Stints breeding in Labrador; and they had not all left that country at the end of August, when I did. We are puzzled by facts like these in attempting to trace the species along even a single line of migration. Taking the Atlantic coast, for example, we have seen the birds wintering in Florida, and even South Carolina. Then the tide flows northward in April, and through this month and the next they abound along the beaches. April appears to be chiefly passed in the middle districts, as New England is generally entered only by the 1st of May; yet even to the end of that month they linger in North Carolina. We may presume that a part of the birds keep directly on, reaching their breeding-places by the end of May, and that at about this time the lingerers sweep after, so that all have made the journey some time early in June—that they then breed at different times in June and July, according to the date of their arrival—that the return of the greater number is directly after the young are grown, many, however, lingering until driven away by the approach of cold. Some such allowance as this for individual, and not concerted, movement seems reasonable, and so perhaps sufficient to explain why the birds are altogether absent only about six weeks in summer even from North Carolina.

“Audubon, who, like others, found the Stint breeding plentifully in Labrador among the mossy rocks near the seashore, has given a good notice of the nest and eggs. ‘The nest,’ he says, ‘had been formed first, apparently, by the patting of the little creature’s feet on the crisp moss; and in the slight hollow thus produced were laid a few blades of slender dry grass, bent in a circular manner, the internal diameter of the nest being two inches and a half, and its depth an inch and a quarter. The eggs measured seven and a half eighths of an inch in length, and three fourths of an inch in breadth. Their ground-colour was a rich cream-yellow tint, blotched and dotted with very dark umber, the markings larger and more numerous toward the broad end. . . . The nest lay under the lee of a small rock, exposed to all the heat the sun can afford in that country.’

“It seems almost superfluous to speak of the habits and manners of so well-known a bird as this, the more so since it is improbable that they differ in any particular from those of its European congener. The Stints, however, are so gregarious, so socially disposed towards other birds of the tribe, and they frequent the sandy beaches of the seashore in such immense hordes, that another of their traits, and one more Snipe-like, is frequently overlooked. No matter how many thousands of them whirl along the beaches with the Semipalmated, the Knots, Dunlins, and Sanderlings, even following the retreating waves like these birds, they are essentially birds of the mud rather than of the sand. The black oozy places in the flat marshes behind the beach, the sloughs and ditches that cut up the places where samphire and rushes grow, and the loamy banks of rivulets and ponds in the interior are favourite resorts. Here, too, they often go in flocks; but quite as frequently they spring up alone as we pass along, with a shrill startling tweet, and dash off twisting like a Snipe; and then they are quite as hard to shoot. They generally become extremely fat in the fall, and are delicious morsels, though it seems a pity to take such a pretty and harmless life just for one bite. Except when they are suddenly frightened by an unexpected approach, they show little fear of man, and often run heedlessly about his very feet. When in flocks their movements are generally simultaneous; and they make a pretty picture as they wheel swiftly, now disappearing against the dull colour of the strand, now flashing into

sight as they turn and show the white of the underparts. They appear to feed indiscriminately upon soft aquatic animals small enough to pass their narrow throats, and also gather the seeds of maritime and other aquatic plants. They probe for things in the mud like others of their kind, sticking their bill in to the full length, and leaving in their wake a series of little holes where they dipped in, now right, now left, as they pattered along."

We are also indebted to our friend Mr. Osbert Salvin for the subjoined observations:—"Though not recorded from Costa Rica, we have a specimen from that country collected by Endres, and it was found near Panamá by the late Mr. MacLeannan. Mr. W. S. Wood, who was attached to Lieutenant Michler's Expedition to Darien, found this Stint very common at Cartagena in November 1857; and Dr. Habel procured two examples on Indefatigable Island, one of the Galapagos archipelago. The instances recorded of the occurrence of this species on the continent of South America are not numerous. Mr. Wallace obtained it on the Island of Mexiana, at the mouth of the Amazon; and Natterer secured two specimens in Brazil, at probably the outskirts of its southern range—one at Cuyaba in April, and the other in the hacienda of Captain Gama, in Matto Grosso, in September. From Bahia we have a specimen sent us by Dr. Wucherer. Returning to the West Indies, we find *Tringa minutilla* apparently common in many of the islands in autumn and winter. Gundlach records it from Cuba, where it is very common from September till May. Mr. Gosse observed it in Jamaica; and also Mr. March in the same island. The latter observer (Pr. Ac. Phil. 1864, p. 67) says that the species is found throughout the year, and that they breed on the salinas and sandy beach, laying three or four eggs on the bare sand; these are described as yellowish, splashed with reddish brown and greyish spots, principally about the larger end. Mr. March adds that he has eggs from the Great Salt Pond and Passage Fort. From our knowledge both of the nesting-habits of this species in other parts of America, and also of those of its immediate congeners, it seems more than probable that Mr. March has here misidentified these eggs, which belong more likely to a small *Ægialitis*. We have Jamaica specimens which were collected in Metcalfe parish by the late Mr. Osburn. The Messrs. Newton observed the species in Ste. Croix, usually in pairs, frequenting both the sea-shore and 'pastures.' It appears there in autumn, and was first observed in 1858 on the 19th of August. According to Léotaud *T. minutilla* visits Trinidad from August to October, being sometimes seen alone, but at others associated with *Heteropoda semipalmata*.

"In Mexico *Tringa minutilla* has been observed near Orizaba by M. Sallé's correspondent, and also in the valley of Mexico by Mr. White. In Guatemala it is a regular winter visitant, arriving in the autumn and departing again in spring; but it would appear to be only found along the coast throughout the winter, visiting the shores of the highland lakes *en passant*. I found it in some numbers on the shores of the Pacific Ocean, near the mouth of the Rio Nagualate, in March 1858, and also at Chiapam during my excursion to that district in the early part of 1863. An account of this expedition is given in the pages of 'The Ibis' for 1865. In November 1861 Mr. Godman and I found it in the grassy swamp which surrounds the small Lake of Dueñas, in the highlands of Guatemala, nearly 5000 feet above the sea-level."

Eggs of this Stint in Dresser's collection, procured in the Hudson's-Bay territory, measure  $1\frac{4}{40}$  by  $\frac{3\frac{3}{40}}$  inch, and in colour are pale stone-grey, closely spotted with purplish brown, the spots

being chiefly collected at the larger end. Compared with eggs of Temminck's Stint the ground-colour is clearer, and the spots are somewhat darker.

In the preparation of the above article we have examined the following specimens:—

*E Mus. Sharpe and Dresser.*

- a.* Musquash, New Brunswick, September 10th, 1862 (*H. E. Dresser*). *b, c*, ♀. Matamoras, Mexico, July 7th and 9th, 1863 (*H. E. Dresser*). *d, e*, ♂ *juv.* Washington, D. C., May 14th, 1860, and Aug. 29th, 1861 (*Dr. Coues*). *f.* San Antonio, Texas, September 1863 (*H. E. Dresser*). *g.* New Jersey (*Krider*). *h.* Cambridge, Mass. (*Dr. Brewer*). *i*, ♂. Lake Borque, Mass., April 1st, 1870 (*Dr. Brewer*). *j*, ♂. Koshkonung Lake, Wisconsin, Aug. 1st, 1870 (*Dr. Brewer*).

*E Mus. Salvin and Godman.*

- a*, ♂. Moose Fort, Hudson's Bay, May 29th, 1860 (*C. Drexler*). *b, c*, ♂, ♀. Aqualta Vale, Jamaica, January 4th, 1860 (*Metcalf*). *d.* Chiapam, Guatemala (*O. Salvin*). *e.* Dueñas, Guatemala, November 1861 (*O. Salvin*). *f.* Costa Rica, 1870 (*Endres*). *g.* Bahia, Brazil (*Wucherer*).







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PIGMY CURLEW.  
TRINGA SUBARQUATA.

## TRINGA SUBARQUATA.

(PYGMY CURLEW.)

- Scolopax subarquata*, Güld. Nov. Comm. Petrop. xix. p. 471, t. xviii (1775).  
*Cape-Curlew*, Latham, Synopsis, iii. pt. 1, p. 126 (1785).  
*Pygmy Curlew*, Latham, Synopsis, iii. pt. 1, p. 127 (1785).  
*Scolopax africana*, Gmel. Syst. Nat. i. p. 655 (1788, ex Lath.).  
*Scolopax pygmæa*, Gmel. Syst. Nat. i. p. 655 (1788, ex Lath.).  
*Numenius africanus*, Lath. Ind. Orn. ii. p. 712 (1790).  
*Numenius pygmæus*, Lath. Ind. Orn. ii. p. 712 (1790).  
*Scolopax dethardingii*, Siemssen, Handb. Mecklenb. Land- u. Wasservögel, p. 169 (1794).  
*Tringa islandica*, Retzius, Fauna Sueciæ, p. 192 (1800, nec Linn.).  
 “*Numenius subarquata* (Güld.),” Bechst. Orn. Taschenb. ii. p. 276, pl. 21 (1803).  
*Numenius pusillus*, Bechst. Gemeinn. Naturg. Vög. Deutschl. iii. p. 152 (1809).  
*Numenius ferrugineus*, Meyer, Taschenb. deutsch. Vogelk. ii. p. 356 (1810).  
*Trynga falcinella*, Pall. Zoogr. Rosso-As. ii. p. 188 (1811).  
*Tringa subarquata* (Güld.), Temm. Man. d’Orn. p. 393 (1815).  
*Tringa pygmæa* (Gm.), Leach, Syst. Cat. M. & B. Brit. Mus. p. 30 (1816).  
*Erolia variegata*, Vieill. Analyse, p. 55 (1816).  
*Falcinellus*, Cuv. (*Scolopax pygmæa*, Gm.), Règne Animal, i. p. 486 (1817).  
*Ancylocheilus*, Kaup (*Tringa subarquata*, Güld.), Natürl. Syst. p. 50 (1829).  
*Pelidna subarquata* (Güld.), C. L. Brehm, Vög. Deutschl. p. 657 (1831).  
*Pelidna macrorhynchos*, C. L. Brehm, Vög. Deutschl. p. 658 (1831).  
*Tringa* (*Pelidna*) *chinensis*, Gray, Zool. Misc. p. 2 (1831).  
*Ærolia varia*, Vieill. Gal. des Ois. ii. p. 89 (1834).  
*Falcinellus cuvieri*, Bp. Comp. List, p. 50 (1838).  
*Schœnichlus subarquatus* (Güld.), Rüpp. Syst. Uebers. p. 126 (1845).  
*Erolia pygmæa* (Gm.), C. L. Brehm, Vogelfang, p. 319 (1855).  
*Ancylochilus subarquatus* (Güld.), Gould, Handb. B. Austr. ii. p. 256 (1865).  
*Tringa subarquata* (Güld.), Finsch & Hartl. Vög. Ost-Afr. p. 761 (1870).
- Curlew Sandpiper*, *Pygmy Curlew*, English; *Bécasseau-cocorli*, French; *Piovanello-panciarossa*, Italian; *Beggazzina-hamra*, Maltese; *bogenschnäbliger Strandläufer*, German; *Krombek-Strandlooper*, Dutch; *Krumnæbet Strandlöber*, Danish; *Krumnæbbet Strandvibe*, Norwegian; *Spof-snäppa*, *Bågnäbbad Strandvipa*, Swedish; *Pitkanokka sirriäinen*, Finnish.

*Figuræ notabiles.*

- D’Aubenton, Pl. Enl. 851; Temminck, Pl. Col. 510; Werner, Atlas, *Gralles*, pl. 8; Kjærb. Orn. Dan. taf. 34, and Suppl. taf. 16. figs. 1, 2; Fritsch, Vög. Eur. taf. 38. fig. 10, taf. 39.

fig. 4; Naumann, Vög. Deutschl. taf. 185; Sundevall, Svensk. Fogl. pl. 42. figs. 3, 4; Gould, B. of Eur. pl. 328; id. B. of G. Brit. iv. pl. 68; id. B. of Austral. vi. p. 32; Schlegel, Vog. Nederl. pl. 230; Audub. B. of Am. pl. 333.

*Ad. ptil. æst.* pileo, collo postico, dorso et scapularibus ferrugineis nigro notatis, plumis vix cinereo-albo marginatis: uropygio saturatè cinereo: supracaudalibus albis vix ferrugineo lavatis et versus apicem nigro transfasciatis: caudâ cinereâ, rectricibus albedo angustè marginatis: remigibus nigro-fuscis, scapis albis, secundariis extûs albo marginatis: tectricibus alarum sordidè cinereis, pallidiore marginatis: areâ ad basin rostri cinereo-albâ: capitis lateribus, gulâ, gutture et corpore subtûs saturatè ferrugineis, abdominis plumis albedo marginatis, abdomine imo et hypochondriis nigro notatis: subcaudalibus supracaudalibus concoloribus: rostro et pedibus nigricanti-viridibus: iride fuscâ.

*Ad. ptil. hiem.* pileo, collo postico, dorso et tectricibus alarum sordidè cinereis, plumis centraliter lineâ saturatè cinereâ notatis: uropygii plumis saturatè cinereis, albo marginatis: supracaudalibus albis: alis et caudâ sicut in ptilosi æstivali picturatis: capitis lateribus et gulâ albis saturatè cinereo striatis: corpore reliquo subtûs albo.

*Juv.* pileo et collo postico griseo-fuscis albedo notatis: corpore et alis suprâ nigro-fuscis metallico nitentibus, plumis albo et albo-cervino marginatis: alis, caudâ et corpore subtûs sicut in ptilosi hiemali picturatis, sed gutture et hypochondriis ochraceo-cervino lavatis.

*Adult in summer* (Barcelona, Spain, May). Crown, hind neck, back, and scapulars rich ferruginous or fox-red, broadly marked with black, and the feathers here and there edged with greyish white; rump dark grey; upper tail-coverts white, barred towards the tip with black, and slightly marked with foxy red; tail ashy grey, with faint whitish margins; quills brownish black with an ashy tinge, shafts white, the secondaries with narrow external white margins; wing-coverts dull ashy, with light edgings; feathers round the base of the bill greyish white; sides of the head, neck, and underparts generally rich deep ferruginous, or deep fox-red, the feathers on the abdomen slightly margined with greyish white; flanks and lower abdomen slightly marked with black; under tail-coverts similar to the upper tail-coverts; bill and legs black with a greenish tinge; iris deep brown. Total length about 7 inches, culmen 1.5, wing 4.88, tail 2.35, tarsus 1.15.

*Adult in winter.* Crown, hind neck, back, and wing-coverts dull dusty grey, most of the feathers with dark shaft-stripes, which do not, however, show much; rump blackish grey, the feathers margined with white; upper tail-coverts white; wings and tail as in the summer plumage; sides of the head and throat white, finely pencilled with dark grey; rest of the underparts white.

*Young of the year* (England, October). Crown and hind neck greyish brown, varied with greyish white; upper parts generally blackish brown, with a metallic gloss, the feathers conspicuously margined with white and buffy white; rest of the plumage as in the adult winter dress; but the throat and upper flanks are washed with warm ochreous buff.

THIS richly coloured Sandpiper, like the Knot, is very widely distributed throughout Europe, Asia, and Africa during the whole of the year, except the breeding-season, and is also found, though rarely, on the east side of the American continent. Curiously enough, though the bird is so common at the seasons of passage, its breeding-haunts are undefined, and its nest and eggs

are quite unknown; but it appears that it must breed in the more boreal portions of North-east Europe and North-western Asia. I hoped that Mr. Seebohm would find it breeding on the Lower Jenesi; but unfortunately he did not succeed in so doing, and it is difficult to say when there will be another chance of obtaining the long-sought-for eggs of this bird.

It does not appear to occur in either Greenland or Iceland; but it is by no means a rare bird on the shores of Great Britain, occurring usually in the late summer and autumn, and almost always in immature dress. It is also met with, but much more rarely, in the spring of the year. All along the south coast of England it is tolerably common in the autumn; and I used frequently to shoot specimens near Hastings and at Rye Harbour, in Sussex; indeed one day, when collecting at the latter place, Mr. E. Booth, now of Brighton, and myself shot sixteen or seventeen of these birds, besides many other good waders. They were both in small parties apart from the other shore-birds, and also mixed with Dunlins, and were by no means so very tame, but rather shy than otherwise. Writing on its occurrence in Norfolk, Mr. Stevenson says (B. of Norf. ii. p. 350), it is "not unfrequently met with on our coast both in spring and autumn, and more particularly in the latter season. From my observations more specimens seem to be obtained in September and October than at any other time." Messrs. Sheppard and Whitear, in their 'Catalogue of Norfolk and Suffolk Birds,' remark (1825), "Several of these birds have been killed at Yarmouth in the autumn. One of them which was shot at that place in the month of August had a red breast, and was in plumage similar to the one in a summer dress preserved in the British Museum. We have met with this species on Pewit Island. It is more solitary than the Dunlin, not more than a pair being seen together, and is a stupid bird, suffering a boat to approach close to it." Mr. Cordeaux says that he has met with it in the Humber district in the spring, but more commonly in the autumn; but it is, on the whole, not common there. And Hancock writes that in Northumberland and Durham it is an autumn visitant, common on the shores in September; and he adds that he never saw an adult bird obtained there, all being in immature dress.

On the coasts of Scotland it is not a rare visitant, occurring most frequently in the autumn. Mr. Robert Gray writes (B. of West of Scotl. p. 317) as follows:—"Mr. Graham states that this species is found occasionally in Iona and Mull; and it is likewise sparingly distributed along the shores of Argyle and Ayr, being especially noticeable in early autumn, when the migratory flocks return from their breeding-quarters. Small flocks have also been seen, and specimens obtained, on the banks of the Forth, near Grangemouth, by Mr. Harvie-Brown. In East Lothian the Curlew-billed Sandpiper is met with in small numbers on the banks of the Tyne. Many years ago, when rambling along the sands at the mouth of the river, I noticed a man and a boy, with a horse and cart, stalking Dunlins and other small shore-birds. The pony had been trained to walk slowly towards a group of birds, while the owner lay concealed in the cart ready to fire his long-barrelled gun over the side; and after waiting until I had seen him literally mow down a flock, I had an opportunity of turning over the contents of his bag, in which I found a fair proportion of this species of Sandpiper. On the 9th of May, 1870, I observed on the shore at the 'Vaults,' near Dunbar, a large flock of Curlew Sandpipers flying in circles, as if disturbed, just above the sea-margin at low tide. I was at once attracted by their musical twitterings, uttered while the flock was on the wing, and sounding like a concert of tiny whistles. The birds

were evidently migrants from the south, and were resting probably for an hour or two in the course of their journey northwards.

“Mr. Mitchell, of Aberdeen, has sent me in the flesh the Curlew-billed Sandpiper from near the mouth of the Don, where it appears to be a well-known visitant; and, in connexion with the same county, I have been assured by Mr. Stuart Burnett, of Keith Hall, that he has met with the bird in a marshy spot in the parish of Kinellar (long since drained) on the 30th May, 1852. ‘At the time,’ writes Mr. Burnett, ‘it seemed to have young near, as it fluttered along the ground in a decoying way, dragging its wings. The same year I saw one or two others in some wet localities near Kintore and Echt, but have not met with the species since in these parts.’

“Mr. Burnett has also sent me word that he discovered a nest of this Sandpiper in a tract of sedgy bog round the Loch of Spynie, near Elgin, on 8th June 1853; it was placed in a tuft of marsh grass, from which the bird fluttered out at his feet, ‘rolling, tumbling, and uttering strange cries.’ The eggs were four in number, and in course of being hatched, the shells being chipped by the bill of the young bird.” With regard to these statements by Mr. Burnett, I must say it appears to me that he must have made a mistake; for it seems in the highest degree improbable that this Sandpiper has ever bred in Great Britain. Dr. Saxby writes that in Shetland it is “a pretty constant autumn visitor; the numbers in which it arrives, nevertheless, vary considerably. It usually appears early in September, mingling freely with Dunlins and Ringed Plovers, at first seeming partial to low meadows and freshwater lochs, even when some distance inland. Only a very few are met with in spring, though occasionally one or two may be seen about the end of May, with the summer plumage in an advanced state; but there is no reason to suspect that it ever remains to breed. A very beautiful male specimen of this bird was brought to me on the 7th of June 1859 by a fisherman, who caught it sitting on the water about twenty-five miles north-west of Unst. He said that as the boat rowed up he merely laid the blade of the oar upon the bird, and drew it towards him. The weather was perfectly calm at the time. The note is something like that of the Dunlin, but it is easily recognized; the voices of the two species blend together pleasantly enough upon the beach at night. The Curlew Sandpipers retire late, and are generally also the earliest birds upon the beach,—that is, when by themselves; for as soon as they mix with the Dunlins they seem to cease thinking of their own movements, leaving themselves entirely under the direction of their new friends. It is nearly always easy to get near them, except, perhaps, when a Redshank condescends to associate with them; and then the getting within eighty yards is next to an impossibility upon open ground. At high water they will resort to stubble-fields near the sea, not for the purpose of feeding, but for repose; and at these times they are so little upon the alert that I have almost walked into the flock, as much to my own surprise as to theirs; for no sign of a bird was to be seen until those nearest me took wing. I once winged a Curlew Sandpiper from a mixed flock; and as it fell upon a small shingle bank surrounded by the water, about a dozen of its own species, separating themselves from the Dunlins, alighted upon the shingle and began feeding; and when I threw stones over them, wishing to drive the wounded bird into the water, so that it might drift ashore, the only effect was to cause them to crouch down as if a Hawk was passing over; and it was not until I had waded within a few yards of them that they flew off and rejoined their late companions.”

Thompson states that it is a regular autumnal visitant to the north of Ireland, but is of very rare occurrence in the winter, and adds (B. of Irel. ii. p. 287):—"Notes connected with it in Belfast Bay for above twenty-five years are before me. From these it appears, as with the *Grallatores* generally, that September is its favourite month in that locality. The earliest arrival noted is the 25th of August; before the end of September its departure is occasionally taken; and it rarely remains until the end of October.

"On the shores only of Antrim, Down, Louth, Dublin, Cork, and Galway I have positively known this bird to occur; but there can be no doubt that it annually visits all suitable places along the range of at least our eastern and southern coast. It is interesting to perceive that at the next place noticed, southward of Belfast Bay, it was obtained after the species leaves that locality, in November, and again at the more southern, Dublin Bay, that it was shot in the following month, December, when it is not with us. The bird would thus seem to be in no haste on its migration southwards."

It occurs in Scandinavia on passage. Mr. Collett says that, though it has been shot in the summer in Finmark, it has not been found breeding in Scandinavia. It is often seen on the coasts of Norway on the autumnal passage, but scarcely ever in spring. It has frequently been shot at Stavanger, at Farsund, and near Christiania; but young birds are those generally met with. Nilsson says that it occurs on the coasts of Sweden on passage, more seldom in the spring, but oftener in the autumn. It passes Gothenburg in March and April, and returns again in July and August, remaining until October. In Finland it is uncommon. Dr. Palmén says that the late Mr. Ekebom received two specimens from near Helsingfors. Sahlberg once observed it on Pyhäjärvi lake, in Yläne, south-western Finland; and Bergstrand records it from Åland. It has never been observed in Finland in spring, but only on the autumn passage. It certainly appears to breed in the north of Russia; and though its nest has not been found there, yet there is sufficient evidence to show that its breeding-haunts must be somewhere in that portion of the globe. Messrs. Alston and Harvie-Brown state that they purchased one in the market at Archangel on the 18th June, but did not meet with it on the islands; and in their article on the ornithology of the Lower Petchora, Messrs. Seebohm and Harvie-Brown write (*Ibis*, 1876, p. 293) as follows:—"During a short half hour that we visited Dvoinik, on the occasion of our first visit, Seebohm succeeded in securing a single example in full breeding-plumage, which was all we saw of the Curlew Sandpiper, unless six or seven other birds, which were feeding along with it at the time it was shot, were of the same species. We obtained no definite clue to its breeding-haunts; but from the accounts we heard, conflicting and untrustworthy as these often were, we gathered that marshy plains and swamps of great extent lie along the courses of the numerous rivers and small streams which flow from the Pytkoff Mountains to the sea, to the north-eastward of Dvoinik. Of this fair land of promise we were only permitted to obtain a very distant and unsatisfactory view, as, on the only occasion when we might have seen it, had the air been clear, from a height upon the tundra to the north of the inlet, a white mist lay along the distant hollows, completely concealing the features of the landscape. The Curlew Sandpiper, as we learn from Mr. Bogdánoff, is seen on the Volga and Kama rivers during both migrations." Mr. Sabanäeff informs me that it occurs on the South-east Ural on passage; and Teplouhoff met with it on the Obva on the 1st July. It is also found in the Baltic provinces and Poland, where, Mr. Taczanowski says,

it is tolerably common, though never numerous, on passage in the autumn, but he never observed it in the spring.

On the islands off the North-German Baltic coast it is said to be a frequent visitant on passage; but, according to Mr. Schalow, it is but rarely seen in Mark Brandenburg on passage, and is more frequently seen in the Uckermark than in any other locality in that district. Schulz received it from Havelberg; Vangerow records it from Königs-Wusterhausen; Brehm states that Fehrmann possesses examples killed in Mark; Borggreve says that he has obtained stragglers in Oderbruch during migration; and a specimen from Marwitz is in the Radziwill collection. It is tolerably common on the coasts of Denmark on passage, the old birds arriving in August and the young in September; and it is found still common in September and October. In the spring it sometimes remains late, and specimens have been obtained by Mecklenburg at Flensburg as late as the 19th and 23rd of July in full summer dress. It is found on the German coast of the North Sea, and occurs in Holland, in somewhat small numbers, in spring and autumn. Along the coasts of Belgium and France the Pygmy Curlew is found in abundance on its passage northward and southward, but it very rarely straggles inland. It is also tolerably common in Portugal; and I saw large numbers when in Barcelona (Spain) in May. One morning when I visited the market in that town I saw two large baskets full of beautiful specimens, in full breeding-dress, and selected as many as I required for a real each. Lord Lilford sends me the following note respecting the occurrence of this Sandpiper in Spain, viz.:—"We found this species in vast numbers in the lower part of the marisma, on the proper right of the Guadalquivir, during the first fortnight of May 1872. Most of those which we shot were in nearly full summer plumage. I think that this species was the most numerous, with the exception of the Knot, of the many Waders that we met with in the above-mentioned locality. It is curious that we did not meet with this species on the mud-flats of the harbour of Santander (a great resort of many species of Waders) in May 1876." Colonel Irby also writes (Orn. Str. Gibr. p. 172) as follows:—"The Curlew Sandpiper I never obtained on its autumnal passage; but in some years vast numbers passed at Gibraltar towards the end of April, usually in lots of from ten to twenty in number; they were occasionally mixed up with Dunlins (*Tringa cinclus*), and were chiefly to be seen at the mouths of rivers, particularly about Palmones. When flying they may be easily distinguished by the white rump, which, when they are on the wing, is very conspicuous. They are in good red or breeding-plumage by the 26th of April; that is to say, the male birds are; but the females are slower in assuming this dress, and probably never become as bright as their mates. About Gibraltar this Sandpiper and others bear the trivial name 'pitillo.' Lord Lilford informs me that he met with the present species at the same place and time as the Knots (*Tringa canutus*), and in equal numbers. Curiously, during that spring, Curlew Sandpipers were unusually abundant near Gibraltar, but not a single Knot did I obtain or see. There is, however, not much ground suitable for the various species of *Tringa* in the vicinity of the Rock." Von Homeyer says that it occurs in the Balearic Islands, in flocks of twenty to fifty individuals, in the early summer. Bailly records its occurrence in Savoy at the two seasons of passage; and it is extremely common at these seasons of the year on the coasts of Italy and Sicily, and is also found in winter in some localities. Salvadori writes (J. f. O. 1865, p. 287) that it is found in Sardinia during the winter; and Mr. C. A. Wright states (Ibis, 1864, p. 148), in Malta it is "common in

spring and autumn; in May it assumes the beautiful red plumage of the breeding-season, in which state I have often shot it in company with Stints; I have also seen it in June, July, August, and September." In Southern Germany it occurs, as elsewhere, on passage, and, Dr. Fritsch writes (J. f. O. 1871, p. 387), visits Bohemia, like the Dunlin, in tolerably large flocks, and specimens are preserved in most collections in that country; formerly it was often exposed for sale in the Prague market. In Transylvania, Messrs. Danford and Harvie-Brown state (Ibis, 1875, p. 422), it is "not rare during its spring migration, but less frequent in autumn. A specimen in full breeding-plumage was shot during our stay at Görgény, on May 29th. They have also been obtained at Gyéké in May, and occur in small flocks in May and June on the Strell. The above-mentioned specimen is in the Klausenburg Museum." In Southern Russia it is said to be a regular visitant on passage; and it occurs commonly in Greece on passage and in winter. Lord Lilford says that it is found at Corfu in great numbers, generally in full breeding-plumage, about the end of May; it doubtless occurs also on the coasts of Turkey and Asia Minor; and Canon Tristram obtained it in Palestine.

In winter it visits Africa, ranging southward to the Cape; and some few non-breeding birds remain in North Africa, at least, all through the summer. Captain Shelley writes (B. of Egypt, p. 254):—"This species is a winter visitant in Egypt, where it is not very plentiful. I shot the only specimen that I saw, at Golosaneh, on the 8th of May, and have one other specimen, procured for me at Alexandria in February. Its habits are similar to those of *Tringa minuta*; and it may occasionally be met with in the same flock as that bird." Von Heuglin says that it occurs in the autumn, winter, and spring on the Nile and its branches southwards to Kordofan, Nubia, Sennaar, and Habesch; and he also met with it in the same seasons on the north coast of Egypt; but it is much commoner on the shores of the Red Sea and the Gulf of Aden. A few are seen all through the summer at Sauakin and Massowah and the archipelago of Dahlak; and he obtained examples there both in the fullest summer dress and also in autumn plumage. On the north-west side of the continent it also occurs: Loche records it as found on the coasts of Algeria in winter; and Favier states (*fide* Colonel Irby, *l. c.*) that it "passes near Tangier in April, returning south in September." Pel met with it on the Gold Coast; and it has been recorded from Gambia, Casamanse, Bissao, the Gaboon, Prince's Island, and by Vernon Harcourt from Madeira. According to Andersson (B. of Damara Land, p. 306), "The Curlew Sandpiper is the commonest *Tringa* at Walwich Bay and all along the lagoons and shallows of the south-west coast, where it ranges southward to Table Bay. It congregates in flocks, often of many hundreds, and not unfrequently in company with the Little Stint and the Sanderling. At some hours of the day, probably when changing their feeding-ground, and chiefly in the early morning, these birds are more on the move than at other times; and the air over the lagoon seems then literally to teem with their myriads, presenting a most animated picture as the white portions of their plumage flash with almost dazzling effect in the early tropical sunlight, especially when the brightness of the scene is enhanced by the presence in the flock of a large reinforcement of Sanderlings. In the afternoon, if, as is the case five days out of seven at Walwich Bay, the wind blows strongly from the south-east, these birds generally retire to some little distance from the water and seek a large open flat in the immediate neighbourhood. Whilst there they are excessively shy and difficult to approach; and I may add that I have observed that this temporary wildness is common to

most water-birds on the Damara coast whenever a high wind arises. On ordinary occasions the Curlew Sandpiper is comparatively tame, and numbers may be bagged without difficulty. Considerable variations of plumage are to be met with, as I have shot at the same time specimens in the grey dress and others in which the plumage has been almost of a rusty red." In the Cape colony it is abundant, Mr. Layard says, along the shores in winter plumage, and lives in great flocks on Robben Island and at the mouth of the Salt River; and on the 26th April 1868 he received an example alive, in full breeding-dress, which had been captured near Cape-town. In Natal, Mr. Gurney writes (*Ibis*, 1862, p. 34), "these birds are gregarious, frequenting the bay in considerable flights, and feeding on the mud-banks when the tide recedes; they run about on the mud with great activity; and their flight is also exceedingly swift." The present species has also been recorded from Mozambique, Zanzibar, and Madagascar.

In Asia it is found right across the continent to China. Pallas states that it is found on the shores of the Caspian in spring; and Mr. A. O. Hume writes (*Stray Feathers*, i. p. 242):—"The Curlew Stint was pretty abundant on the Sindh and Mekran coast, much less so, however, than the Dunlin. While the Dunlin abounds on every large river of Upper India throughout the cold season, I have never yet met with *Tringa subarquata* more than one hundred miles from the sea-coast, except at the great salt lake of Rajpootana at Sambhur, whence, as also from the Yarkand river, I have it in summer plumage. It does not, however, breed at Sambhur." According to Dr. Jerdon (*B. of India*, ii. p. 689), it "is found throughout India, is rare towards the south, common about Calcutta, and in the north of India generally;" but Mr. Hume remarks, "Dr. Jerdon tells us that this species is common in the north of India generally, whereas neither I myself, nor any of my numerous coadjutors, have ever obtained it in the N.W. Provinces, Oudh, the Central Provinces, Rajputāna, or the Panjāb." On the other hand, Colonel Irby states (*Ibis*, 1861, p. 240) that it is occasionally observed in Oudh and Kumaon in the cold season. According to Dr. Henderson (*Lahore to Yarkand*, p. 288), "this species was common in the marshes in the immediate neighbourhood of Yārkand. Specimens obtained at the close of August were in a transitional stage between the breeding- and winter-plumage." In Siberia it is tolerably common. Von Middendorff first saw it on the Taimyr, in 74° N. lat., on the 4th June; and soon after they scattered in the swampy parts of the tundra to breed. A female shot on the 15th (27th) June had an egg in her nearly ready to be laid. Near the mountains, he adds, it became rarer, and he met with it on the Boganida on the 27th May, but it did not appear to breed there. Von Schrenck obtained a single specimen, on the 15th (27th) August, near Agdeki, on the Ussuri; and Dr. Radde met with it in flocks, in full summer dress, on the 31st July (O.S.), on the Dshindagatai lake. It is found in China and Mongolia; and Père David says (*Ois. de la Chine*, p. 473) that he has seen it on passage, in large numbers, on the coasts of China, and met with it in full summer dress in Mongolia; but Mr. Swinhoe states that it is found near Peking, but rarely (if ever) visits the southern coasts of China—though he procured it at Amoy and on Formosa. It has been met with, however, southward to the Andaman Islands, Java, Borneo, (according to Temminck) in New Guinea, and (to Gould) in Australia: Davison says (*fide* Hume, *Str. Feathers*, ii. p. 297):—"Small flocks of this bird are to be met with about the creeks and sea-shore at the Andamans; I did not obtain it at the Nicobars; nor did I observe it at Port Blair after my return from the Nicobars in March. I, however, once saw a small party of three or four on the

northern coast of the Great Nicobar; and this was the only time I saw it. From October to April this species is common; but we also have specimens shot in June and July, neither of which are in full summer plumage, though birds killed at the end of April in India are already in full summer plumage."

Mr. Gould says (Handb. B. of Austr. ii. p. 256) that he possesses three specimens from Australia, one of which was killed on Rottnest Island, another on the mainland of Western Australia, and the third at Port Macquarie, in New South Wales. He adds that they do not in the least differ from European examples.

In America it is only known as a rare and accidental straggler to the west coast. Dr. Brewer writes to me respecting its occurrence in the United States as follows:—"The Curlew Sandpiper is of rare occurrence in America, and is actually known to have been taken in so few localities, and in so small a number of instances, that we can only regard it in the light of a straggler. Only about twenty instances are recorded of individuals taken in America, nearly all of which were procured near New York city. Mr. Boardman reports three from St. Andrews, on the St. Croix; Mr. Maynard has taken one at Ipswich, Mass., for a while the only one recorded from New England; Mr. Girard has obtained two or three in the New-York market, from Long Island; and Mr. J. G. Bell, the taxidermist, in the course of many years, has obtained seven or eight from the same source. Three or four others are reported, also from Long Island. Mr. Audubon met with three individuals only in the course of his life, one shot near Sandy Hook, Long Island, the other two in New Jersey in 1829. They are always, or very nearly so, single solitary individuals that are thus captured. In May 1876, a second New-England specimen was shot in East Boston. It was in full spring plumage, as was one of the three recorded by Mr. Boardman."

In habits the present species differs inappreciably from the Dunlin, with which species it frequently associates in the same flock. I have often shot them on our shores, and could never detect any material difference in habits between the two species, and have sometimes found them consorting together, and at others in separate flocks. Its call, however, differs from that of the Dunlin; and when on the wing the present species is usually recognizable at once by its white rump.

Its nesting-habits are as yet quite unknown; and, so far as I can ascertain, no authentic eggs of the Pygmy Curlew are known to exist in any collection. There appears, however, little doubt that it breeds in North Russia, both on the European side of the Ural and in many parts of North Asia. Dr. Otto Finsch informs me that he found it breeding on the tundras of the Ob, and procured young birds in down, but did not preserve them.

Bädeker figures eggs as those of this species, which he received from Mr. J. C. H. Fischer; but Mr. Fischer writes (Naturh. Tids. i. pp. 132, 133) that these eggs were brought to him in Vendsyssel, Denmark, in 1859, without any particulars, and he was unable to determine to which species they were referable. He therefore sent them to Bädeker to ask his opinion about them; and not long after, to his astonishment, he saw them figured in Bädeker's work as eggs of the Pygmy Curlew.

The specimens figured are an adult bird, in full summer dress, in the foreground, and an adult, in winter plumage, in the background, both being the birds above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a, b, juv.* Pagham, Sussex, September 1870 (*R. B. Sharpe*). *c, ♂ juv., d, ♀ juv.* Rye, Sussex, September 5th, 1860 (*H. E. D.*). *e, juv.* Rye, October 1st, 1860 (*H. E. D.*). *f, g, ♂, h, ♀.* Barcelona, Spain, May 1866 (*H. E. D.*). *i.* Gambia, winter (*Whitely*). *k.* Port Elizabeth, S. Africa, winter (*Cutter*).

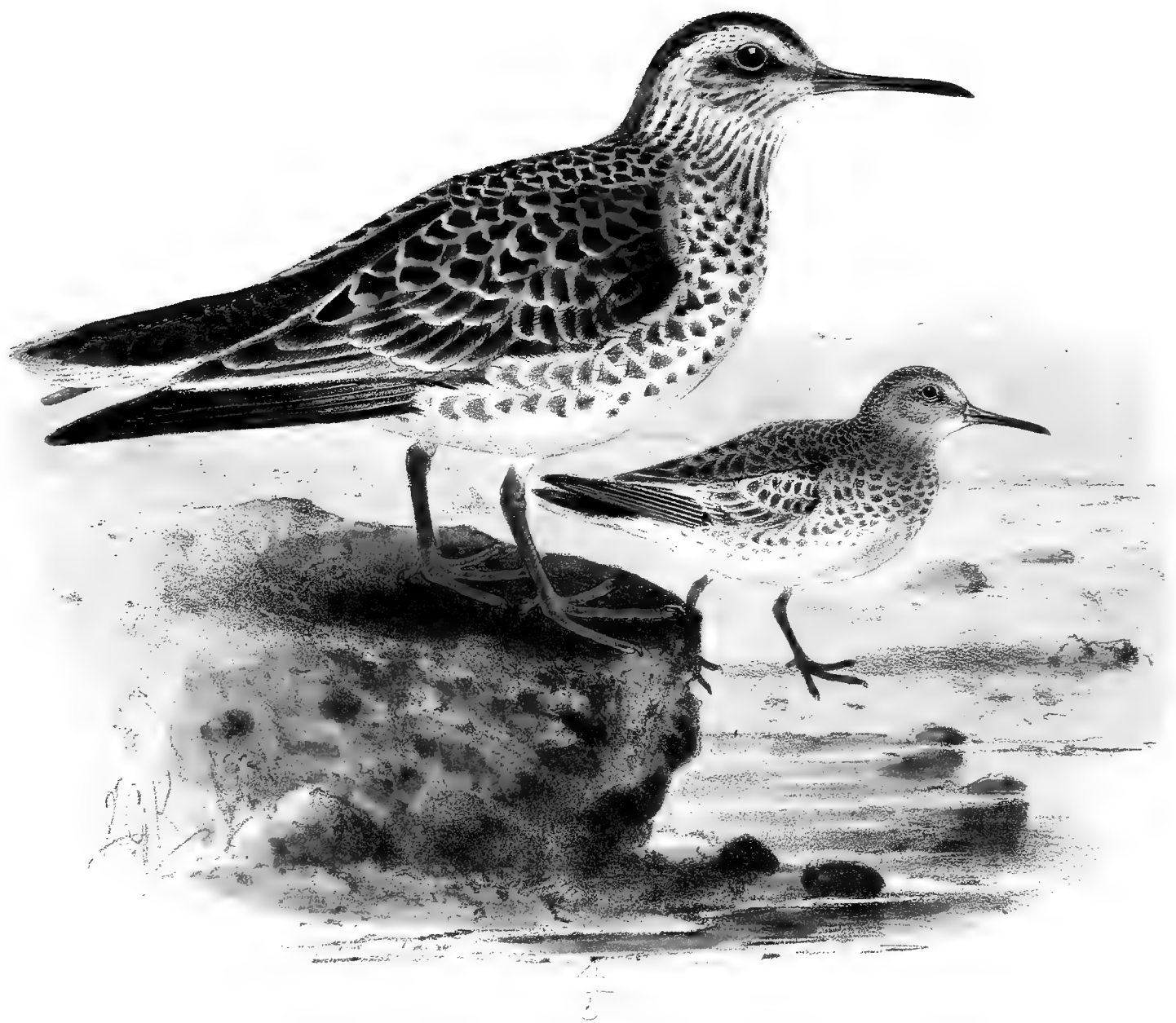
*E Mus. C. A. Wright.*

*a, ♀.* Malta, May 7th, 1870 (*Paul*). *b, ♂, c, ♀, d, ♀, e, ♀, f, ♀, g, ♂, h, ♂, i, ♂.* Malta, May 1871 (*C. A. W.*). *j, k, l.* Malta, May 12th, 1872 (*C. A. W.*). *m, ♀.* Malta (*C. A. W.*). *n, ♀.* Malta, May 13th, 1874 (*C. A. W.*). *o, ♀.* Malta, May 27th, 1874 (*C. A. W.*).

*E Mus. Howard Saunders.*

*a, ♀.* Siddlesham, Sussex, August 30th (*J. E. Harting*). *b, ♂.* Malaga, August 2nd, 1872. *c, ♂.* Malaga, May 9th, 1874 (*Rios*).





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PURPLE SANDPIPER.  
TRINGA STRIATA.

# TRINGA STRIATA.

(PURPLE SANDPIPER.)

- Tringa maritima*, Brünn. Orn. Bor. p. 54 (1764).  
*Tringa striata*, Linn. Syst. Nat. i. p. 248, et Add. (1766).  
*Tringa maritima*, Gmel. Syst. Nat. i. p. 678 (1788, ex Brünn.).  
*Tringa nigricans*, Mont. Trans. Linn. Soc. iv. p. 40 (1798).  
*Quebec Sandpiper*, Lath. Gen. Syn. Suppl. ii. p. 313 (1802).  
*Tringa canadensis*, Lath. Ind. Orn. ii. Suppl. p. 65 (1802).  
*Trynga arquatella*, Pall. Zoogr. Rosso-As. ii. p. 190 (1811).  
*Totanus maritimus* (Gm.), Steph. in Shaw's Gen. Zool. xii. p. 146 (1824).  
*Tringa littoralis*, C. L. Brehm, Vög. Deutschl. p. 652 (1831).  
*Tringa (Arquatella) maritima* (Gm.), Baird, B. N. Am. p. 717 (1858).  
*Arquatella maritima* (Gm.), Coues, Proc. Phil. Acad. 1861, p. 183.  
*Tringa (Pelidna) maritima* (Gm.), Dall, Proc. Cal. Acad. Feb. 1873, fide Coues.

*Bécasseau violet*, French; *Piovanello violetto*, Italian; *See-Strandläufer*, German; *Paarse Strandlooper*, Dutch; *Vintersneppe*, Danish; *Gråagréðlingur*, *Fjadrilmurra*, Færoese; *Sarbarsuk*, *Sirksariarsungvak*, Greenlandic; *Selningur*, *Fjallafæla*, Icelandic; *Fjæreplijt*, Norwegian; *Skärnsnäppa*, *Svartgrå-strandvipa*, Swedish; *Meri-sirriainen*, Finnish; *Pesoschnik morskoi*, Russian.

## Figuræ notabiles.

Werner, Atlas, *Gralles*, pl. 11; Kjærbo. Orn. Dan. taf. 34; Naumann, Vög. Deutschl. taf. 188; Sundevall, Svensk. Fogl. pl. 42. fig. 5; Gould, B. of Eur. pl. 344; id. B. of G. Brit. iv. pl. 75; Schlegel, Vog. Nederl. pl. 229; Audub. B. of Am. pl. 330.

♂ *ad. ptil. æst.* pileo et nuchâ nigris albido et ochraceo striatis: capitis lateribus sordidè albidis nigro-fusco striatis: dorso et scapularibus nigris purpureo nitentibus, plumis albido et rufescenti-ochraceo marginatis: uropygio et rectricibus centralibus nigris purpureo nitentibus: rectricibus reliquis fumoso-cinereis: remigibus nigricantibus, secundariis externis albo apicatis, et intimis nonnullis fere omnino albis: tectricibus alarum nigricantibus purpureo tinctis et albido marginatis: gulâ albâ nigro-fusco striatâ: pectore pallidè cinereo, albo et nigricanti-cinereo notato: corpore reliquo subtus albo, hypochondriis nigricante cinereo notatis: subcaudalibus centraliter nigricante cinereo striatis: rostro fusco, ad basin flavido: pedibus ochraceis: iride fuscâ.

*Ad. ptil. hiem.* pileo, nuchâ, capitis et colli lateribus fumoso-nigricantibus vix purpureo tinctis: dorso et scapularibus nigris purpureo tinctis, plumis angustè cinereo marginatis: uropygio, caudâ et alis sicut in ptilosi æstivali picturatis: mento albo: gutture et pectore fumosè nigro-cinereis, plumis vix albido marginatis: hypochondriis nigro-cinereo notatis.

*Adult Male in breeding-dress* (Lichtenfels, S. Greenland, 16th June). Crown and nape black, striated with

white and ochreous; sides of the head dull white, striated with blackish brown; back and scapulars black with a purplish gloss, most of the feathers broadly margined with white and rufescent ochreous; rump and central rectrices black with a purplish tinge, remaining tail-feathers blackish grey; quills blackish with white shafts, the outer secondaries tipped with white, and some of the inner ones nearly altogether white; wing-coverts blackish with a purple tinge and edged with white; throat white, striated with blackish grey; breast light grey, marked with white and blackish grey; rest of the underparts white, the flanks marked with blackish grey; under tail-coverts centrally striped with blackish grey; bill ochreous-yellow at the base, otherwise dark brown; legs ochreous-yellow; iris dark brown. Total length about 8 inches, culmen 1.15, wing 4.7, tail 2.4, tarsus 0.9.

*Adult in winter* (St. John, N.B., 31st December). Crown, nape, sides of the head, and neck sooty blackish with a faint purplish tinge; back and scapulars black with a purplish tinge, the feathers with narrow greyish margins; rump, wings, and tail as in the summer plumage; chin white; throat and breast sooty blackish grey, the feathers on the latter with white edgings; rest of the underparts white, the flanks spotted with blackish grey.

*Young in down* (Magerö, Norway, 28th June). Forehead rufescent buff, with a central black line; crown black, dotted with white and warm ochreous; hind neck nearly white; upper parts black, dotted with white and rufous; the sides boldly blotched with rusty rufous; underparts white; the throat tinged with warm buff; a V-shaped black mark at the base of the bill on each side.

On the shores of the northern portions of both the Palæarctic and Nearctic Regions the Purple Sandpiper is generally distributed during the summer, migrating southward in winter, at which season it ranges tolerably far south, having even been found in South Africa.

In Great Britain it is to be met with on almost all parts of the coast which are rocky and suitable to its habits, but only in the winter season; and there is no authentic instance of its having bred here, though it may possibly have remained to nest in the north of Scotland; for Dr. Saxby says that a few remain in Shetland throughout the breeding-season. It is met with on the south coast of England during the cold season. Mr. Gatcombe informs me that it is a regular winter visitant to the coasts of Devon and Cornwall, appearing late in October or early in November, and leaving again in April. Mr. Mansel-Pleydell says that it is not very uncommon in Dorsetshire. Many have passed under his observation from the Kimeridge coast, shot during the winter months, and also from Poole Harbour, where they are occasionally abundant. He has the record of one shot near Lyme Regis in 1831; and several were obtained by Mr. Thompson from near Weymouth in the months of August and November. Mr. Cecil Smith also informs me that it is a not uncommon winter visitant to the Somersetshire coast.

According to Mr. Saxby it is "not uncommon on the sea-coast in the autumn, either in small parties or in company with Dunlins. It rarely occurs, however, at this season within the Humber, although not uncommon at Spurn at the mouth of the river in the autumn." He "only met once with it in the spring, namely a small flock of seven on the rocks at the entrance point of the Flamborough Headland on the 25th April, 1865." To the coasts of Northumberland and Durham, Mr. Hancock writes (B. of Northumb. & Durh. p. 115), it is "an autumn or winter visitant, arriving on the coast with the Knot in September. Single specimens are met

with occasionally earlier. I have killed it in August; and Mr. C. M. Adamson shot one on the 19th of July. These early birds retain their worn summer dress. It is common during the autumn and winter months, and has been killed up to the middle of May. I have an example that was shot at St. Mary's Island on the 18th of that month; and Mr. C. M. Adamson shot one on the 9th; both these specimens had acquired their summer plumage." Mr. Robert Gray says (B. of W. of Scotl. p. 326), "throughout the west of Scotland the Purple Sandpiper is found from September till the end of April and beginning of May; but in some of the inner islands, as well as those of the outer group, many specimens are observed even a month later in the season. Dr. Dewar observed several flocks on the Ascrib Islands, in Loch Snizort, in the north-west of Skye, on 6th May, 1870. Single birds, indeed, were found lingering on the mainland about the same time; two specimens have been sent to me from the shores of Loch Ridden, in the Kyles of Bute. Captain Feilden shot two specimens near Barra Head, on the island of Bomeray, on 27th May of the same year, and two others on Mingalay. On dissection they all proved to be females; and one of them showed some abrasion of the belly- and breast-feathers, from which it was inferred that it had been sitting on eggs. The ovaries of all the birds were found to be much distended; but no mature eggs were found in them. Two of these specimens are now before me, and appear to be in full breeding-plumage. Captain Feilden has suggested to me that when the four birds were shot the males had been sitting on the nests. Single birds have also been seen in Harris late in May; and I have myself observed solitary birds on the island of Scalpa, at the entrance to Loch Tarbert. Mr. Graham has met with several specimens in complete summer dress on the islands of Iona and Staffa, where a few pairs appear to linger every year.

"On the east coast the Purple Sandpiper is also met with in summer in equal numbers, ranging from Berwickshire to the Shetland Islands. Small parties were observed in the last-named district by Mr. Hewitson about thirty years ago. Mr. Selby found the young more than once on the Farne Islands in the month of June, when they were scarcely able to fly; and I met with and shot stray specimens fully fledged near Dunbar in the end of July 1851. Sir William Jardine also saw a pair on the Bass Rock at a time when all other birds had young; and Macgillivray mentions having seen one on the same rock on 20th May, 1831." According to Dr. Saxby, from the beginning of October to the beginning of May it is by far the commonest of the Shetland Sandpipers; and he believes that it sometimes breeds there.

In Ireland it is to be met with regularly in the autumn and winter on certain parts of the coast. Throughout Greenland, wherever it finds suitable localities, it is generally distributed, and is said to be very common, occurring also during winter as far north as the sea is clear of ice. Dr. Pansch met with it on Sabine Island. According to Professor Newton it is, in Iceland, "common everywhere in the neighbourhood of the coast, and occasionally to be seen inland, where it also breeds. According to Faber it is a resident, and hatches its eggs about the middle of June. Great numbers are shot near Reykjavik in spring, and are sold for the table." On the Færoes many breed, the species being, Captain Feilden says, not uncommon on Sandoe. It is common in Norway, and, Mr. Collett informs me, breeds numerous in East Finmark both near and at some distance from the sea. In winter, he adds, it is found in countless thousands along the whole coast up to the North Cape. Professor Nilsson states that numbers pass the

winter on the rocky coasts of Scandinavia, from the extreme north down to Bohuslän, where it is to be met with throughout the winter on Orust and Tjörn. Some few are seen in November and December on the coasts of Skåne. In Finland, Dr. Palmén writes (Finl. Fogl. ii. p. 197), it is rare, except on the coasts of the Arctic Ocean. Lilljeborg met with it at Schuretskaja; and Sahlberg and Malmberg met with it in flocks at Ponoj in August 1870. Occasionally it straggles to the interior of Lapland; and Malm shot a male at Utsjoki on the 9th October, 1841. Only one specimen is known as having been obtained on the Baltic coast, and is supposed to have been shot near Helsingfors. On the north coast of Russia it is found in suitable localities, and, according to Dr. Th. von Heuglin, is one of the commonest species in Novaya Zemlya and Waigats, where he found it singly, in pairs, or in small flocks both on the coast and on the marsh-creeks in the interior. He caught young in down early in August near Mototschkin Sharr, and saw young birds of the year in September.

Professor von Malmgren says (J. f. O. 1863, p. 372) that it is very common on the coasts of Spitzbergen, as far as Brandywine Bay, being seen in the autumn and winter in flocks on the coasts, but in the breeding-season in pairs in damp mossy places; and its nest is usually on a small hillock. He saw the first flock on the 28th of May, on the shore of Kobbe Bay, after which he saw it continually until he left the north coast early in September. Messrs. Evans and Sturge state, "it was very abundant in Coal Bay (on the south side of Ice Sound—so named on account of a small quantity of poor coal being found there); and we found four of their nests on the high fjeld. Beautiful little nests they were, deep in the ground, and lined with stalks of grass and leaves of the dwarf birch (*Betula nana*, L.), containing mostly four eggs of an olive-green, handsomely mottled with purplish brown, chiefly at the larger end. We watched this elegant little bird—the only one of the Grallatores we saw—with much interest as it waded into some pool of snow-water, or ran along the shingle, every now and then raising its wings over its back and exhibiting the delicate tint of the underside, at the same time uttering its loud, shrill whistle." It occurs stragglingly on the coasts of Germany. Borggreve says that he once obtained it on the Hiddensee, near the Baltic, and once on Sylt, in the North Sea; and Boeck procured it on the Pomeranian coast in February. Mr. E. von Homeyer says that, though rare on the Baltic coast, it occurs in large numbers on the coast of Schleswig-Holstein; and Mr. A. Benzon informs me that it only remains in Denmark during mild winters, and usually migrates further south. It is therefore most numerous during the two seasons of passage. As regards Kjærbølling's statement that it breeds there, he says that there is no foundation for such a statement, and that, as far as he can ascertain, it has never been met with in Denmark later than May. Its common Danish name is, he adds, "*Vintersneppe*"; and it is not known to the peasantry by the names of *Strandryle* and *Sortgraa-Strandlöber*." On the coast of Holland it is met with during winter; and Baron von Droste Hülshoff adds that it probably visits Borkum every winter, but has been overlooked; and it has, he adds, been seen there as late as the 3rd of May. Baron de Sélys Longchamps states that in Belgium it is not common on the coast and on the Scheldt, and is never seen on the marshes in the interior. In France it occurs on passage in the northern provinces, but is not seen every year. Professor Barboza du Bocage includes it in his list of birds inhabiting Portugal, with a query; and Colonel Irby states (Orn. Str. Gibr. p. 172) that it occurs on the coast of Spain not uncommonly during the winter. In Italy it is of rare occurrence;

but Salvadori records a fine specimen obtained in Piedmont, and now in the Turin Museum, and others are said to have been obtained near Venice and in Liguria. It does not appear to visit the south, and Salvadori puts no faith in Cara's assertion that it has been found in Sardinia; but, on the other hand, Mr. A. B. Brooke writes (*Ibis*, 1873, p. 339), it "has been killed several times near Capo St. Elia. This Sandpiper is not very uncommon round the Gulf of Genoa; and therefore I can see no reason for doubting the accuracy of Signor Cara's observations on this species." Dr. Krüper states that it occurs rarely in Greece during winter; and Erhardt records it from the Cyclades as a migrant. The Ritter von Tschusi-Schmidhofen tells me that he knows of no instance of its occurrence in Austria; but, according to Jukowitz, it is said to have occurred on the Neusiedler lake, in Hungary, in 1857.

I do not find any record of its occurrence on the coasts of Asia Minor or North-east Africa; nor does Favier record it from Tangier, though it doubtless occurs in North-west Africa. Mr. F. DuCane Godman, who met with it in the Azores, says (*Ibis*, 1866, p. 101) that "a small flock was usually to be seen in company with some Turnstones about the rocks near Santa Cruz, in Flores. I was told that in summer they are frequently seen upon the rough pasture-land, high up in the mountains. The people say they go there to feed in hot weather; but I suspect they breed there as well, since a lad at Santa Cruz told me that he had shot very young birds. No one, however, that I met with could give me any information about their nesting-habits. The only specimen I procured was a male in full summer plumage, and was shot in June." I find no record of its occurrence on the west or south coasts of Africa, beyond the statement made by Dr. Finsch (*Abh. naturw. Ver. Brem.* iii. p. 65) to the effect that he has examined a specimen from the Cape of Good Hope.

It is found in North Asia; but I find no data respecting its occurrence there, except that by Von Middendorff, who says that he shot three examples in 75° N. lat., on the 9th of August, but did not again observe it.

I am indebted to Dr. E. Coues for the following notes respecting its occurrence in North America:—"In North America the Purple Sandpiper is a common bird of the coasts, as far south as the middle States, beyond which its occurrence may be questioned. Although one of the more noticeably maritime species of this group, it nevertheless is found on some of the larger inland waters of the United States, especially in the region of the Great Lakes. It is said to be common on the shores of Lake Michigan; and Dr. P. R. Hoy, of Racine, Wisconsin, has noted its occurrence in Missouri. It is one of the eminently boreal species, wintering along the New-England coast, and only breeding, so far as I am aware, in the higher latitudes. I found it on the Labrador coast in summer, but not under circumstances enabling me to be at all confident of its breeding there; for, as is well known, Sandpipers continually appear in August, and even in July, in places where they do not nest. The partiality of this species for rocky coasts laden with sea-weeds, rather than for those open sandy beaches where most other Sandpipers resort, is perhaps the most notable point in its life-history. The shortness of its legs, which are feathered to the suffrago, together with its coloration, give it a peculiar aspect as it scrambles among the weedy rocks, with which it is partly assimilated in hue." To this I may add that Mr. Dall (*Trans. Chic. Acad. Sc.* i. p. 291) says that one was obtained a mile or two below Nulato, on the Yukon, and another at Pastolik, but its nest and eggs were not seen. He also obtained one at St. George's

Island, Behring's Sea, where it was common on the dry uplands and on the hills. Bischoff got it plentifully at Sitka, and also at Plover Bay, on the Asiatic side of Behring's Straits. To this Mr. Bannister adds that in October 1865 he obtained quite a number of specimens at the Redoubt, where it then appeared to be quite common. In the succeeding year he did not observe it up to the 1st of October, when he left the country. Von Kittlitz records it from the small island of Amachnak, near Unalashka. My brother Arthur, who knows this bird well, assures me that he met with it on Lake Nipigon and on Lake Ontario. Captain Blakiston says that it occurs in Melville Peninsula and Hudson's Bay; and I used to see it in large numbers during the winter off the coast of New Brunswick and Maine.

Essentially maritime in its habits, frequenting the rocky wilder portions of the sea-coast, the present species is seldom or never met with inland, except during the breeding-season. I have never had an opportunity of watching it except in the winter, when large numbers frequented the coasts of New Brunswick, especially the rocks off Mace's Bay, there called the Ledges. These rocks used to be nearly covered during high tides, one small flat rock alone being above water; and I have seen this literally covered with Purple Sandpipers, and have when sailing past killed large numbers at one discharge as they rose to fly off. As a rule, I found them very tame, allowing one to approach tolerably close as they ran about amongst the rocks in search of food. Owing to their short legs, and the thick covering of feathers, which they puffed out a good deal, they had a very short, dumpy look, and reminded me of a dark ball of feathers as they glided along the surface of the rock. I often noticed a curious habit they had of allowing the spray of a wave to dash over them instead of running quite clear of it: and this my friend Mr. Gatcombe has also observed; for he writes to me that he has observed these Sandpipers feeding during rough weather on the rocks, and that, on seeing a larger wave than usual approach, they would crouch and, holding firmly to the rock, allow the spray to dash completely over them, rising immediately the water receded, displaying the greatest activity in picking up their food until another wave compelled them to crouch once more. The present species feeds on small marine insects of various kinds, and various mollusca. Mr. Collett says that the stomach of one obtained in Norway on the 12th of November, contained the young of *Litorina* and *Mytilus edulis*, together with seeds of a sea-shore plant; and individuals he shot in Finmark in the summer had in their stomachs the remains of insects, chiefly of *Otiorhynchus blandus*.

Dr. Saxby gives (B. of Shetl. p. 211) some interesting details respecting the present species as observed by him in Shetland, viz.:—"Its habits are best observed on a lee shore after a breeze of sufficient strength to cause a pretty heavy swell. These birds may then be seen to advantage, running and climbing about the large rocks, picking off shells and small insects—every returning wave apparently so nearly sweeping them away, as it rolls foaming up the steep beach, that, in spite of one's self, it is almost impossible to leave the spot, fully expecting the next will overwhelm them. But, often as I have watched them, such an untoward event has never been witnessed, so vigilant are they, however deeply engaged in their work, and so nimbly do they rise, almost perpendicularly, at the precise moment when the rising wave seems to be upon the point of bearing them down with it. It is usually during or immediately after a gale, when the whole of the rocky parts of the coast are buried under a constant cloud of heavy spray, that they seek the open shore. There, in company with Turnstones, Dunlin, or Ringed Plovers,

they find, cast up by the sea, more than sufficient for their wants, though they still prefer to obtain food at the very edges of the waves. When, however, the gale is so furious that remaining exposed to it is utterly impossible, they retreat to the shelter of the rocks; but they sometimes come inland, where they seem pretty well contented under the lee of the walls. I have seen them at such times feeding within a few yards of the front of the house.

“As spring approaches, small parties are often met with upon the tops of the hills, several hundred feet above the level of the sea. Returning homewards rather late one evening, across a small piece of wet gravelly ground upon a hill near Balta Sound, I heard a low grating sound, and after some little search discovered it proceeded from a Purple Sandpiper which was standing near with its bill partly open, and apparently making great efforts to swallow something. I then shot the bird, and found in its mouth a small roundish stone, partly covered with a minute vegetable substance, which also grew in great abundance upon every stone beneath the slowly trickling water. A large quantity of the same substance was present in the stomach and œsophagus; and more of it was thickly entangled in the double row of papillæ upon the palate. I afterwards shot two more of the same species similarly engaged. This certainly looks very much as if the papillæ, assisted by those at the base of the tongue, acted together as a kind of double rasp.

“The familiarity of these birds often enables one to approach within a few feet; sometimes in the dusk of the evening I have succeeded in creeping up so close that I might almost have touched them with the muzzle of the gun. At such times I have heard another very peculiar sound, nearly resembling the loud ticking of a watch. At first it seemed likely that it proceeded from the bursting of a succession of air-bubbles as they ascended from the hidden inhabitant of one of the pools of water near at hand; but afterwards hearing it when the bird was standing upon a piece of dry ground, some distance inland, my opinion was altered.

“The Purple Sandpiper is an excellent swimmer. In calm weather I have seen three or four, belonging to a large party, swimming actively about the base of a rock upon which their companions were feeding. I never saw one dive except when wounded and closely pursued. Sometimes when I have disturbed one on a calm day, it has taken wing and has deliberately alighted upon the water several yards from the shore.”

The breeding-season varies somewhat according to locality, the eggs being deposited from the middle of May to the early part of June. The places selected for nidification are elevated stony places, usually, however, not far from the sea; and the nest, which is merely a depression in the soil or moss, is amongst the short grass with which these places are covered. The eggs, four in number, vary as much as do those of the Dunlin, with which in general coloration they bear much affinity. I possess a considerable series from Greenland and the Færoes, which vary in ground-colour from bright sea-green to greenish grey and stone-buff, and are marked with pale purplish or purplish grey underlying shell-markings and dark reddish brown surface-spots and blotches, most of them being more profusely blotched at the larger end. In size they vary from  $1\frac{1}{40}$  by 1 inch to  $1\frac{2}{40}$  by  $1\frac{4}{40}$  inch. Mr. Benzon informs me that he possesses one egg which is uniform light green in colour without any spots. Dr. Elliott Coues, referring to eggs of this bird, writes to me as follows, viz.:—“Various eggs of this species show the usual pyriform shape, and measure about 1.40 by 1.00. The ground is clay-colour, more or less shaded with oliva-

ceous; the markings are large, numerous, and bold, of rich umber-brown of different depths or intensities, occurring all over the surface, though most numerous and largest, as a rule, on the major half of the egg. With these heavy surface-markings are found also various short spots of pale purplish grey or light neutral tint." Captain Feilden, who found this bird breeding in the Færoes, says:—"Pairs of these interesting birds are to be found breeding throughout the islands; but they appear to be most abundant on Sandoe, whence I received most of the eggs I procured. I only found one nest myself; and that was on the 20th of May, when walking over the fells between Thorshavn and Norderdahl. I almost placed my foot on the hen bird, which then fluttered off the nest, pretending to be broken-legged and winged; indeed the poor thing employed every artifice to draw our attention from her eggs: she succeeded in deceiving our guide, who ran after her and tried to catch her. I stopped the chase, which would otherwise have proved a long one, by shooting the bird. Returning to the nest I found four eggs lying in a little hollow scooped out of the scanty moss which clothed this alpine region; a few dried sprigs of moss composed the lining of the nest. The fells on this date were deep with snow in the sheltered spots, and the tops of the hills were white. The Purple Sandpiper was frequently seen by us along the shore, sometimes singly, often in company with others of its species, as well as with Dunlins and Turnstones, feeding at low tide on the small shells and animalcula left on the sea-weed. It is remarkably tame, and will allow a person to approach it within a few feet. Wolley remarks, 'We found it breeding on the summits of the mountains in small numbers: young just fledged at the end of June.'" When the young are hatched they are most carefully tended by their parents, who show the greatest solicitude for their safety; and should a stranger approach they use their utmost exertion to lure him away, or fly close round him, exhibiting the greatest anxiety. When wounded, this Sandpiper will take to the water; and as they swim and dive well, it is not easy to secure it, as I have often found when trying to retrieve a wounded bird without a dog.

The specimens figured are, in the foreground, the adult male, in full summer dress, from Greenland, and, in the background, an adult winter-killed specimen from New Brunswick.

In the preparation of the above article I have examined the following specimens:—

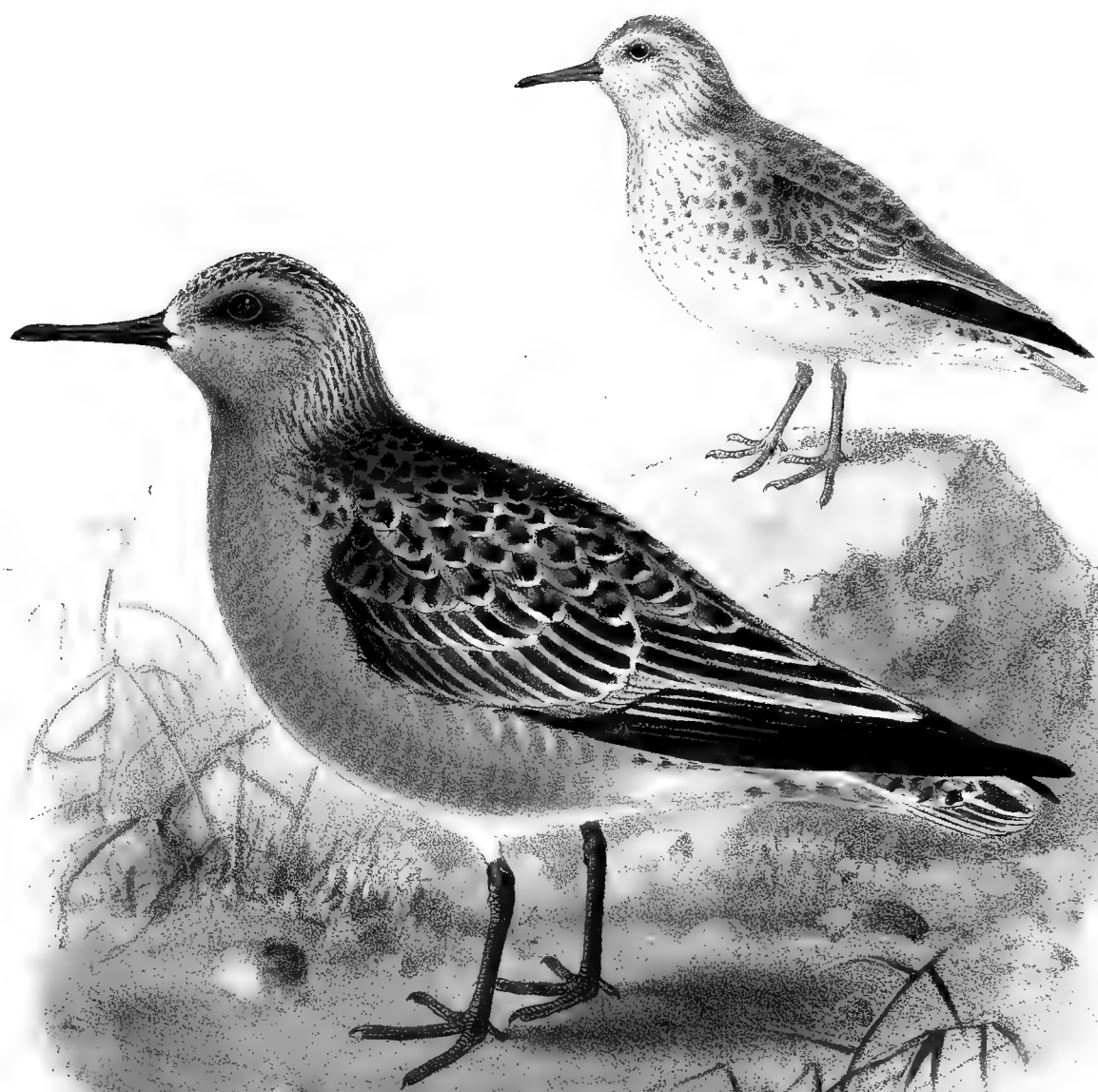
*E Mus. H. E. Dresser.*

*a, ad.* Copenhagen, June 7th, 1866 (*Benzon*). *b, ♂ ad.* Greenland, June (*Ericksen*). *c, adult.* Greenland (*Ericksen*). *d.* Greenland, winter plumage. *e.* Lichtenfels, S. Greenland, June 10th, 1874 (*Dr. Finsch*). *f, g, ad.* Mace's Bay, New Brunswick, 1860 (*H. E. D.*). *h, ♀.* Dipper-Harbour Ledges, New Brunswick, December 31st, 1861 (*H. E. D.*). *i, pull.* Itoglek, Greenland (*Benzon*). *k, pull.* Færoes (*H. C. Müller*). *l, pull.* Magerö, Norway, June 26th, 1872 (*R. Collett*). .

*E Mus. Salvin and Godman.*

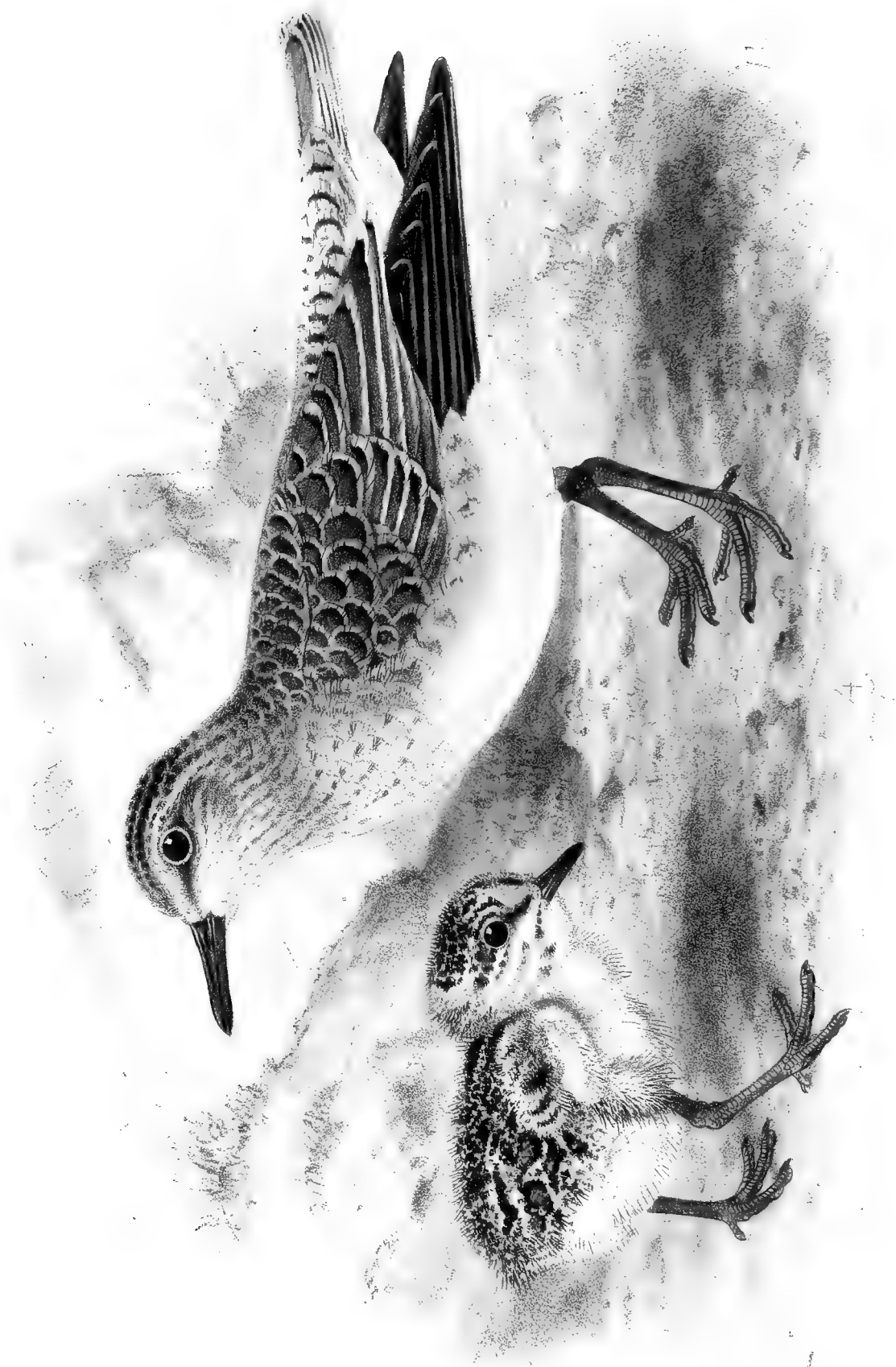
*a, ♂.* Bodö, Norway, May 18th, 1857. *b, ♀.* Bodö, May 4th, 1857. *c, ♀.* Bodö, May 1857. *d, ♂.* Flores, Azores, May 19th, 1865 (*F. D. Godman*).





KNOT.  
TRINGA CANUTUS.





KNOT.  
IMMATURE AND YOUNG IN DOWN

*Scolopax graminea* Linn.

## TRINGA CANUTUS.

(KNOT.)

- Tringa calidris*, Briss. Orn. v. p. 226, pl. xx. fig. 1 (1760).  
*Tringa calidris nævia*, Briss. Orn. v. p. 230, pl. xxi. fig. 1 (1760).  
*Tringa calidris grisea*, Briss. Orn. v. p. 233, pl. xxi. fig. 2 (1760).  
*Tringa canutus*, Briss. Orn. v. p. 258 (1760).  
*Tringa ferruginea*, Brünn. Orn. Bor. p. 53. no. 180 (1764).  
*Tringa canutus*, Linn. Syst. Nat. i. p. 251 (1766, ex Briss.).  
*Tringa calidris*, Linn. Syst. Nat. i. p. 252 (1766, ex Briss.).  
*Tringa islandica*, Linn. Syst. Nat. i. pt. ii. Addenda (1767, ex Brünn.).  
*La Maubèche commune*, Buff. Hist. Nat. Ois. vii. p. 529 (1780).  
*La Maubèche tachetée*, Buff. tom. cit. p. 531 (1780).  
*La Maubèche grise*, Buff. tom. cit. p. 531 (1780).  
*Le Canut*, Buff. Hist. Nat. Ois. viii. p. 142 (1781).  
*Southern Sandpiper*, Lath. Gen. Synopsis, iii. p. 187 (1785).  
*Tringa australis*, Gmel. Syst. Nat. i. p. 619 (1788, ex Lath.).  
*Tringa nævia*, Gmel. Syst. Nat. i. p. 681 (1788, ex Briss.).  
*Tringa grisea*, Gmel. Syst. Nat. i. p. 681 (1788, ex Briss.).  
*Tringa ferruginea*, Meyer, Taschenb. deutsch. Vogelk. ii. p. 395 (1810).  
*Tringa rufa*, Wils. Amer. Orn. vii. p. 43, pl. 57. fig. 5 (1813).  
*Tringa cinerea*, Temm. Man. d'Orn. p. 404 (1815, nec Linn.).  
*Calidris islandica* (Linn.), Ross, Voyage of Discovery, ed. 2, ii. App. iv. p. 167 (1819).  
*Canutus islandicus* (Linn.), C. L. Brehm, Vög. Deutschl. p. 654 (1831).  
*Canutus cinereus* (Temm.), C. L. Brehm, op. cit. p. 655 (1831).  
*Calidris canutus* (Linn.), Gould, B. of Eur. iv. pl. 324 (1837).  
? *Tringa lomatina*, Licht. Nomencl. Av. p. 92 (1854).  
*Bécasseau-maubèche*, French; *Piovanello maggiore*, Italian; *isländischer Strandläufer*, *roster Strandläufer*, German; *Kanoet-strandlooper*, Dutch; *Islandsk Strandløber*, Danish; *Kajok*, *Kajordlik*, Greenlandic; *Rauðbrystingur*, Icelandic; *Islandsk Strandvibe*, Norwegian; *Kustsnäppa*, Swedish; *Rantasirriäinen*, Finnish.

*Figuræ notabiles.*

Edwards, Gleanings, pl. 276; D'Aubenton, Pl. Enl. 365, 366; Werner, Atlas, *Gralles*, pl. 14; Kjærb. Orn. Dan. taf. 34; Fritsch, Vög. Eur. taf. 38. fig. 9, and taf. 39. fig. 2; Naumann, Vög. Deutschl. taf. 183; Sundevall, Svensk. Fogl. pl. 42. figs. 1, 2; Gould, B. of Eur. pl. 324; id. B. of G. Brit. iv. pl. 65; Schlegel, Vog. Nederl. pls. 227, 228; Audub. B. of Am. pl. 328; Wilson, Am. Orn. pl. 57. fig. 5.

*Ad. ptil. æst.* pileo, nuchâ et collo postico pallidè ferrugineis cum albido immixto et nigro-fusco striatis:

3 x

corpore suprâ nigro, fusco-ferrugineo et albido variegato: uropygio et supracaudalibus albis, nigro transfasciatis et ferrugineo notatis: remigibus primariis nigricantibus, secundariis saturatè cinereis albo terminatis: tectricibus alarum saturatè cinereis, albo apicatis, plumis nonnullis dorso concoloribus: caudâ cinereâ, albo apicatâ: subtùs ferrugineus, abdomine imo et subcaudalibus albis: rostro et pedibus nigricantibus: iride fuscâ.

*Ad. ptil. hiem.* pileo, nuchâ et corpore suprâ pallidè et sordidè cinereis, indistinctè saturatè cinereo striatis, uropygio et supracaudalibus haud ferrugineo notatis: caudâ et alis sicut in ptilosi æstivali picturatis, sed tectricibus alarum pallidioribus: corpore subtùs albo, gutture, pectore et hypochondriis sordidè cinereo striatis et notatis.

*Juv.* adulto in ptilosi hiemali similis sed suprâ saturatiore, plumis nigricanti et ochraceo-cervino marginatis: capite nigricanti notato: gutture, pectore et hypochondriis ochraceo-cervino lavatis.

*Pull.* lanugine indutus: fronte cervinâ centraliter nigro striatâ, supra oculos striis duabus ad nucham productis: pileo postico nigro, rufescenti notato et cervino guttato: nuchâ isabellino-cervinâ, vix nigro notatâ: corpore suprâ nigro, rufescente fusco notato et profusè albido guttato: corpore subtùs albo vix cervino lavato.

*Adult Male in summer* (Spain, 6th May). Crown, nape, and hind neck light rusty rufous and white intermixed, and tolerably closely striped with black; back and scapulars black, conspicuously marked with rufous and edged with white; primary quills blackish, the shafts white, secondaries dark grey, the short ones terminated with white; wing-coverts dark grey tipped with white and slightly intermixed with feathers coloured like the back; rump and upper tail-coverts white, barred with black, and slightly intermixed with rufous; tail dark grey narrowly margined with white; throat, neck, and underparts generally rich rust-red, except the centre of the lower abdomen and under tail-coverts, which are white marked with rusty red, the latter being slightly marked with narrow black stripes; bill and legs blackish; iris dark brown. Total length about 10 inches, culmen 1.5, wing 6.7, tail 2.6, tarsus 1.25.

*Adult Female* (Spain, 6th May). Does not differ from the male, except in being a trifle less in size.

*Adult in winter.* Crown, nape, back, scapulars, and inner secondaries light dull greyish ash with faint darker stripes; rump and upper tail-coverts white barred with black; wings and tail as in the summer dress; but there is no trace of rufous in any part of the plumage, and the wing-coverts are lighter ashy grey; underparts white, the throat, sides of the neck, breast, and flanks slightly striped and marked with dull ashy grey.

*Young* (Lincoln Bay, 82° 7' N. lat., 31st August). Differs from the adult in winter dress in having the upper parts darker grey, the head being marked with blackish and warm buff, and the feathers on the upper parts of the body being margined first with blackish and then with warm buff, giving the upper parts a varied appearance; the throat, breast, and flanks washed with warm buff, the rest of the underparts being as in the adult bird in winter.

*Nestling in down* (Floe-berg Beach, 30th July). Forehead warm buff with a central black line; over the eye a double black line; crown, from the centre backwards, black slightly varied with rufous and dotted with buff; nape creamy buff slightly varied with blackish; upper parts of the body black slightly varied with reddish brown, and profusely dotted with creamy white; underparts white slightly washed with warm buff.

ALTHOUGH its breeding-haunts are situated in such high latitudes that they are only known to have been reached by those engaged in various Arctic expeditions, the Knot ranges very far south during the winter season, having been recorded from South Africa, New Zealand, and Brazil. With us in Great Britain it is common all round the coast during the autumn and winter season, most numerous, however, during the seasons of passage. Large flocks arrive on our shores from the southward about the middle of May; and the birds composing them are then in full summer dress. I have frequently shot it on the south coast of England; and on the east coast it is said by Mr. Stevenson to be a regular and at times a very numerous visitant. According to Mr. Cordeaux (B. of Humb. Distr. p. 132), it "occurs annually in the autumn, often in immense flocks, on the Humber foreshores, some portion of which, as the season advances, retire southward, many, however, remaining; and they may be found in greater or less numbers all through the winter along the coast. These receive large accessions, probably from some northern locality, in severe weather, their abundance or scarcity during the winter seasons appearing mainly dependent on the mildness or severity of the season;" and Mr. Hancock, in recording its occurrence on the coasts of Northumberland and Durham, says that it is "a common winter visitant, arriving on our coast in August, and remaining till spring. A few adults make their appearance sometimes as early as July; these are usually in their faded summer dress. At Fenham Flats, in the neighbourhood of Holy Island, the Knot often appears in large numbers in the autumn and winter months." Referring to its range in Scotland, Mr. Robert Gray writes (B. of W. of Scotl. p. 318) as follows:—"Judging from my own observation, I should be inclined to regard this bird as a somewhat uncommon species in the western counties of Scotland. I have met with occasional specimens from Sutherlandshire to the Mull of Galloway, but I have never seen such flocks on our shores as are to be seen on those of the eastern counties. It has lately occurred in Islay, as I have been informed by Mr. Elwes, but not, so far as I am aware, on any of the other islands, except in a single instance—namely, that of a specimen in full summer plumage, which was shot on the 30th of July 1870, by Captain MacRae in the Strand of Vallay, in North Uist, and shown to me by that gentleman three days afterwards when I visited the island. This specimen is now in the collection of Captain Orde. In September 1866, when on a visit to the Mull-of-Galloway lighthouse, I saw a fine specimen taken on the lantern, against which it fell stunned; but Mr. M'Donald, one of the keepers there, informed me that he had never observed one before. On the east coast the Knot is usually found in small flocks, on all the shores extending from Caithness to Berwick. At some places, and in particular seasons, these flocks are much larger than at other times, especially in the month of September, about the time of their arrival, when they are seen in countless numbers." On the autumn migration, according to Dr. Saxby, the Knot arrives in Shetland in September, a few being, however, seen in July and early in August, but it is very seldom seen there in winter. On the Irish coast, as in England, it is common in suitable localities during the autumn and winter.

In Greenland it is rare in the south, but often met with in the north. By the older Arctic expeditions it was found breeding on Melville Peninsula, and in great abundance on the Parry Islands; but it has not been met with on the east coast of Greenland. Captain Feilden, who, when on the recent Arctic expedition, was fortunate enough to rediscover the breeding-haunts of the Knot, writes to me as follows:—"I found the present species common along the shores

of the Polar basin in summer, where it must breed abundantly. My utmost endeavours failed to procure the eggs of this species. The young bird in down, accompanied by the old male, was procured on the 3rd July 1876, in lat.  $82^{\circ} 27' N.$ ; and others were captured at Discovery Bay, in lat.  $81^{\circ} 44' N.$ "

In Iceland, Professor Newton writes (Notes on Orn. Icel. p. 14), "this bird arrives late in May; and Faber considers that it breeds on the uplands, a supposition which I consider very probable. However, Mr. Fowler, whose attention I particularly called to it before he started for Iceland, says:—'I had my eyes very wide open for this bird. I never once got a glimpse of it, and do not believe in its existence in the island at the breeding-time, at any rate inland. Though I questioned the natives very closely, I could hear no tidings of it.' On the south-west coast it is very well known as a bird of passage. One morning, at the end of May 1858, I found the shore at Kyrkjuvogr literally alive with a large flock of Knots, all in their beautiful red plumage. There had been none there the day before. They stayed about a week, their numbers gradually diminishing until at last only two or three were to be seen. This is one of the birds possessing great interest to the oologist; for, I believe, no collector has well-authenticated specimens of its eggs. Notwithstanding Mr. Fowler's evidence, I still conceive it possible that a few pair may remain to breed in the island, though undoubtedly the majority pass on to Greenland, or perhaps to land further north of which we have no knowledge." It visits the Færoes during its spring and autumn passages, and is found on the coasts of Scandinavia. Mr. Robert Collett informs me that it visits the west coast of Norway on passage, but is found in large numbers only in a few favourite localities, and he met with it in vast flocks in August and September on the low portions of Jæderen, near Stavanger, most of them still in full summer dress. In the spring it is much less numerous on the Norwegian coasts; and in the northern portions of the country it is not at any season of the year common. According to Professor Nilsson it occurs all along the coasts of Sweden, but always in small numbers, during the two seasons of passage. In Finland it is rare, being only met with as a straggler on the south coast. Tengström says that one was shot at Helsingfors long ago; and Mr. Fristedt obtained one there on the 2nd of August 1859, this latter being the only specimen in the Finnish collection. It appears to be rare in Northern Russia, and was not observed on the Petchora by Messrs. Seeböhm and Harvie-Brown; but I am informed by Mr. Leonida Sabanäeff that it occurs near Moscow in August; and he adds that it is found in the Ural, in the Pavdinskaya Dacha, where it is said to breed (?), and occurs in the Ekaterinburg district on passage.

Borggreve says that it occurs regularly and commonly on the coasts of Germany on passage and in winter, but is somewhat scarce in the Baltic, and very rare in the interior. Mr. A. von Homeyer says (J. f. O. 1864, p. 218) that he shot a Knot in a field fully four German miles from the sea, on the 15th of October, at Vorland, near Grimmen, in Pomerania, and saw two others at the same time. In Denmark it occurs rather sparingly than otherwise on passage; and the same may be said respecting its occurrence in Holland and Belgium. It is also met with on the French coasts; and Messrs. Degland and Gerbe state that on the coasts of Picardy, and near Dunkerque, it is to be met with during about five months out of the twelve—from April to the end of May, and from August to the end of October. Mr. Adrien Lacroix says that it is met with in the French Pyrenees only accidentally during winter after severe storms; and it appears

to visit the coasts of Portugal occasionally. In Spain it is, curious to say, frequently common in May, and is then found in full summer dress. I met with it exposed for sale in the Barcelona market early in that month; and Lord Lilford found it in countless numbers, about the 10th of May, near the edge of the Coto de Doñana; but Colonel Irby says that it is irregular in its appearance in the vicinity of Gibraltar, and he met with it but rarely, and only in April and May. According to Count Salvadori it is of very rare occurrence in Italy, where it is stated to have been met with in Venetia and Liguria; and Mr. A. B. Brooke records it as occurring in Sardinia in winter. Mr. C. A. Wright says (*Ibis*, 1864, p. 148) that there is a specimen in the Malta University Museum; and Schembri records the capture of two or three examples in January and February in winter plumage.

It has been recorded as a rare straggler in Southern Germany. Dr. Anton Fritsch writes (*J. f. O.* 1871, p. 388) that Palliardi obtained it in August 1849, and another was shot on the 18th September 1853, at the Bohdanec pond, near Pardubic. The specimen in the Feldegg collection is also said to have been obtained in Bohemia. Messrs. Danford and Harvie-Brown record it from Transylvania as being not rare on riversides during passage; and it has been met with in various parts of Austria and the Turkish empire. According to Dr. Krüper it appears singly in Greece in winter; and Messrs. Elwes and Buckley state that it was seen on the coast of Turkey, near Kustendji. It is also found in Southern Russia; but I have no data respecting its occurrence on the coasts of Asia Minor.

In North-east Africa it is of rare and almost doubtful occurrence. Neither Captain Shelley nor Dr. von Heuglin met with it there; but Dr. Vierthaler states that he observed it on the Lower Blue Nile. It appears, however, to be certainly found on the west side of the continent. Favier states that it passes near Tangier in June; but, as Colonel Irby justly remarks, the passage must take place very early in that month. It has been obtained in Gambia and on the Gaboon; and Mr. Andersson states (*B. of Damara Land*, p. 306) that it is of rare occurrence on the coast of Damara Land, and the few he observed there were generally associating with flocks of Sanderlings, Curlew Sandpipers, and Little Stints along the shallows in Walwich Bay. Dr. Hartlaub states that it visits South Africa; but Mr. E. L. Layard did not meet with it in the Cape colony.

In Asia the Knot is tolerably widely distributed, but seems to be everywhere somewhat rare. Von Middendorff says that he did not meet with it on the Taimyr, except on one occasion, when he found one dead on the 30th August. Two were shot on the Boganida on the 27th May; but it was not seen again there; on the 7th July, however, a large number were seen on the sea-shore close to the mouth of the Udá. Dr. von Schrenck shot two on the 17th (29th) August on the low pebbly shore of the Amoor, near the Nikolaieffsk post. According to Dr. Dybowski it is rare in Dauria, and he only obtained one specimen, shot in Kultuk on the 24th of August 1870. It is, so far as I can ascertain, not recorded from Japan; but Mr. Swinhoe has specimens obtained at Shanghai. Dr. Jerdon included it in his 'Birds of India;' but Mr. A. O. Hume says (*Stray Feathers*, i. p. 241) that the bird obtained by Dr. Jerdon was doubtless not the present species, but *Tringa crassirostris*, Temm. & Schl. I do not find it recorded from the intervening countries; but it has occurred in Australia and New Zealand. Mr. Gould writes (*B. of Austr.* ii. p. 259) that he received undoubted examples from Moreton Bay, in Australia;

Dr. O. Finsch states (J. f. O. 1874, p. 157) that he has examined a specimen in winter plumage from New Zealand; and Mr. Buller writes (B. of N. Zeal. p. 195) as follows:—"This cosmopolitan species is occasionally obtained in New Zealand, but only in its winter plumage. There are several specimens in the Canterbury and Otago Museums, all of them obtained on the east coast. It has not been recorded on the North Island; but there is no reason why it should not occur there also. Captain Hutton is in error in stating that I shot one of these birds at Wanganui, the specimen which I presented to the Colonial Museum having been received by me from the South Island."

On the American continent it is found commonly in the north, and straggles in winter as far south as Surinam, whence there is a specimen in the Leyden Museum; but it appears to be rarer on the west than on the east coast. Mr. Dall states that it is rare at the mouth of the Yukon river, in Alaska; and one example was obtained at Sitka by Bischoff. On the east coast it is common on the shores of the British possessions during passage, more especially so in autumn in New Brunswick. Dr. Elliott Coues states, on the authority of Professor Snow, that it is common in Kansas; and it is also given by Mr. Wheaton as occurring in Ohio, and may not be rare on the larger inland waters. It occurs along the whole Atlantic coast during passage and in winter, and is plentiful. Dr. Coues records it from South Carolina; but I did not meet with it on the Texan coast, where it probably occurs; for, according to Mr. Osbert Salvin (*Ibis*, 1874, p. 319), Prince Maximilian von Neuwied obtained an immature bird in Brazil.

Except at its breeding-haunts, where the present species is scarcely known, the Knot is found in flocks, frequenting the shores of the sea in larger and smaller flocks, like the Dunlin and other species of Sandpipers. As a rule, it is not shy, and will allow itself to be approached tolerably near, especially when engaged in search of food. It is usually seen close to the water, or on the large mud flats left bare by the receding tide, where it finds an abundance of food. It feeds on worms, aquatic insects, coleoptera, small crustaceans, and mollusca, and frequently follows the receding waves, retreating with extreme agility as the water returns. Its flight is powerful and swift; and, like the Dunlin, a flock will perform various evolutions, flying out towards the sea, wheeling round, and skimming along above the surface of the water. It is usually seen on our coasts in winter dress, arriving early in September after the red plumage has been nearly all lost, and leaving us again as it commences to don its richly-coloured summer livery; but not unfrequently some remain later with us, and are then seen in full nuptial dress. It is somewhat remarkable that large numbers are occasionally seen in Southern Spain in the month of May, being then in full summer dress; and Colonel Irby saw five, one of which he shot and gave to me, at Santander as late as the 17th of June. When one considers the vast tract that has to be traversed before these birds could reach their usual breeding-haunts, it would seem that some few individuals may remain in more southern latitudes and not breed: or else they must migrate very quickly; for we not unfrequently find large numbers of the young birds on our coasts in July.

It had long been generally known that the Knot bred in the extreme north; and the fact led to a supposition, expressed by several competent authorities, that a tract might exist, close to the Pole, not yet reached by any expedition, where the climate was milder and where the water was open and tolerably free from ice during a short season of the year, and that in this agreeable retreat the Knot nested and brought up its young, unmolested by man, in security. The fallacy

of this theory, however, has now been fully demonstrated ; for the sledging-parties sent out from the 'Alert' discovered nothing but an impassable barrier of ice, and left almost all trace of bird-life behind them, while the Knot was found breeding near where the vessels wintered ; but, as above stated by Captain Feilden, he was not fortunate enough to find the eggs of this species, no examples of which are known to exist in collections.

The specimens figured are, on the one Plate the adult bird in full summer dress in the foreground, and one in winter dress in the background ; and on the second Plate I have figured the young bird in down obtained by Captain Feilden, and an immature example also obtained by that gentleman, on the recent Arctic Expedition ; and I take the present opportunity of expressing my indebtedness to him for the generous manner in which he has placed his specimens and notes at my disposal.

In the preparation of the above article I have, besides the series collected on the Arctic Expedition, of which I have kept no list, examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Pagham Harbour, Sussex, May (*Harting*). *b*, ♂. Pagham, May 17th, 1867 (*Harting*). *c*, *d*, *e*, *f*, *juv.* Pagham, July 1870 (*R. B. Sharpe*). *g*. Pagham, May 23rd, 1872. *h*, ♂. Dragör, near Copenhagen, April 24th, 1870 (*A. Benzon*). *i*. Sweden, 1864 (*Wegelin*). *k*, ♀. Öland, August 25th, 1867 (*Meves*). *l*, ♂, *m*, ♀. Marisma, Coto de Doña Ana, Spain, May 6th, 1872 (*Lord Lilford*). *n*, ♀. Santander, Spain, June 17th, 1876 (*Colonel Irby*). *o*, ♂. Shanghai, China, April 1873 (*R. Swinhoe*). *p*. New-Jersey coast, winter (*J. Krider*).



## Genus MACHETES.

*Tringa* apud Brisson, Orn. v. p. 290 (1760).

*Pavoncella* apud Leach, Syst. Cat. M. & B. Brit. Mus. p. 29 (1816).

*Machetes*, Cuvier, Règn. Anim. i. p. 490 (1817).

*Limosa* apud J. E. Gray, Ill. Ind. Zool. ii. pl. 52. fig. 2 (1835).

*Totanus* apud J. E. Gray, tom. cit. pl. 52. fig. 1 (1835).

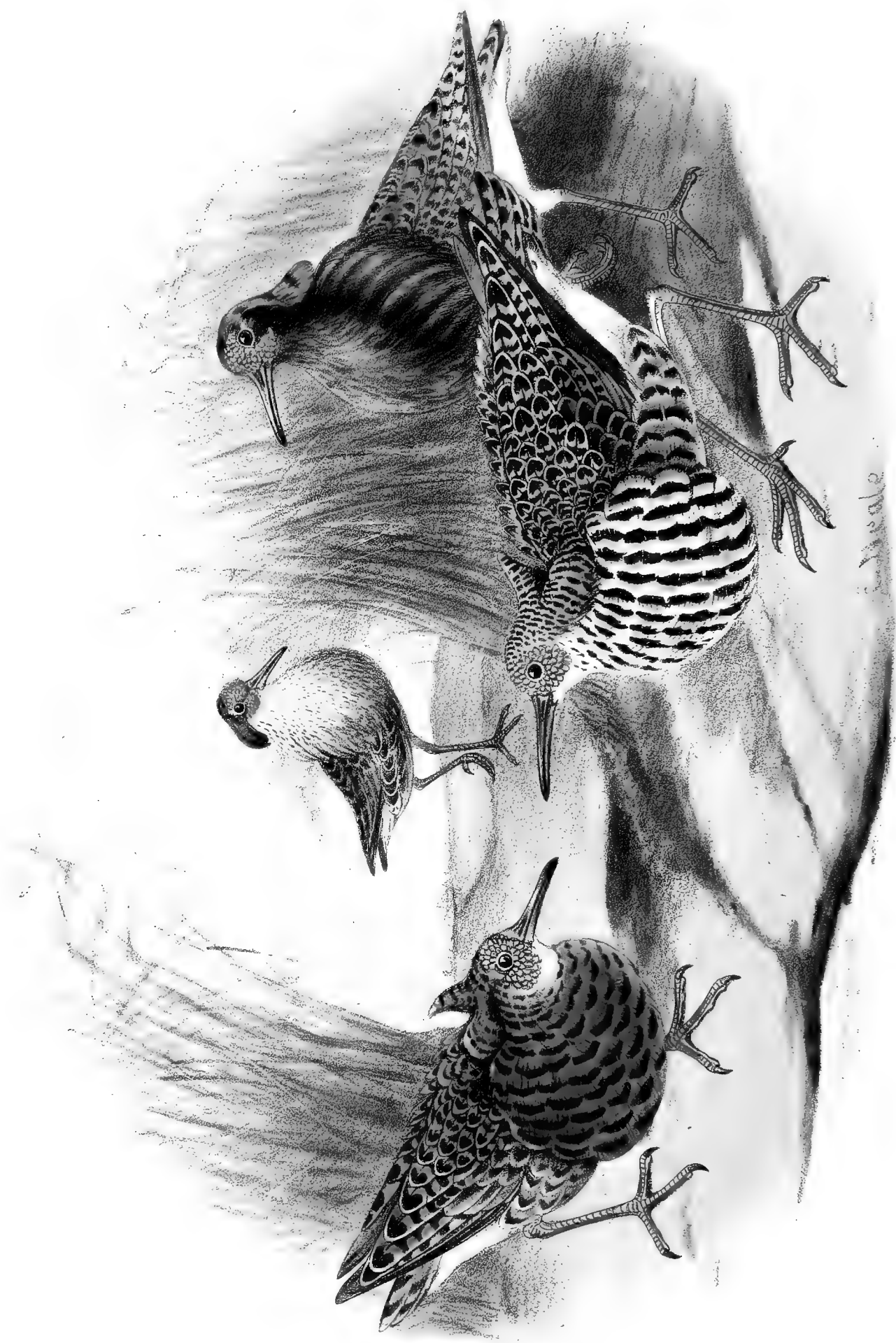
*Philomachus* apud G. R. Gray, List of Gen. of B. p. 89 (1841).

THIS genus contains only a single species, *Machetes pugnax*, which inhabits the Palæarctic, Oriental, and Ethiopian Regions, being also a rare straggler to the Nearctic and Neotropical Regions. Full particulars of its habits and nidification are given in the following article; so I need not recapitulate them here.

*Machetes pugnax*, the type of the genus, has the bill longer than the head, higher than broad at the base, tapering to the point, which is flattened, gradually rounded and obtuse; nasal groove extending nearly to the end; the nostrils moderate, basal, linear, pervious; wings long, pointed, the first quill longest, the second but a shade shorter; some of the inner secondaries much elongated; tail rather short, doubly emarginate; legs long, the tibia bare for one third of its length; tarsus slender, compressed, scutellate; hind toe small, anterior toes long, scutellate, marginate, the outer and middle ones connected at the base by a web; claws small, arched, compressed, acute. In summer plumage the face of the male is covered with fleshy tubercles, and the neck encircled by a large ruff of elongated feathers.





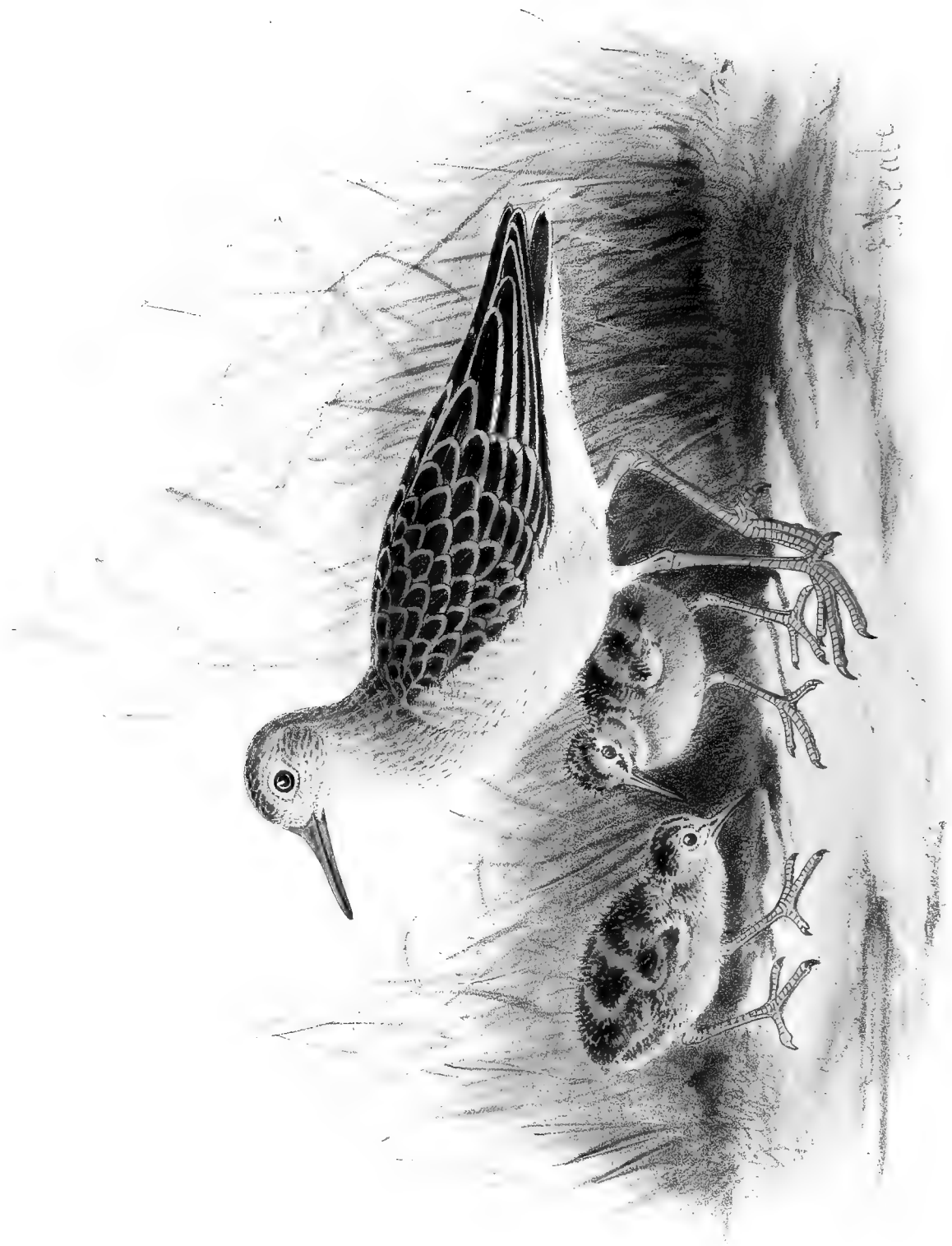


J. Nugent Fitch del.

RUFF.  
MACHETES PUGNAX.

E. Mearns sc.





REEVE.  
MACHETES PUGNAX

[Illustration]

## MACHETES PUGNAX.

(RUFF.)

- Tringa pugnax*, Briss. Orn. v. p. 240, pl. xxii. (1760).  
*Tringa totanus cinereus*, Briss. Orn. v. p. 203, pl. xvii. fig. 2 (1760).  
*Tringa pugnax*, Linn. Syst. Nat. i. p. 247 (1766).  
*Tringa littorea*, Linn. tom. cit. p. 251 (1766).  
*Le Chevalier varié*, Buff. Hist. Nat. Ois. vii. p. 517 (1780).  
*Le Combattant ou Paon de Mer*, Buff. tom. cit. p. 521, pl. xxix (1780).  
*Tringa equestris*, Lath. Ind. Orn. ii. p. 730 (1790).  
*Tringa grenovicensis*, Lath. tom. cit. p. 731 (1790).  
*Tringa rufescens*, Bechst. Gemeinn. Naturg. Deutschl. iii. p. 332 (1809, nec Vieill.).  
*Pavoncella pugnax* (L.), Leach, Syst. Cat. M. & B. Brit. Mus. p. 29 (1816).  
*Totanus pugnax* (L.), Nilss. Orn. Suec. ii. p. 71 (1817).  
*Machetes*, Cuv. (*Tringa pugnax*, L.), Règ. Animal, i. p. 490 (1817).  
*Machetes pugnax* (L.), C. L. Brehm, Vög. Deutschl. p. 670 (1831).  
*Machetes alticeps*, C. L. Brehm, ut suprâ (1831).  
*Machetes planiceps*, C. L. Brehm, op. cit. p. 671 (1831).  
*Limosa hardwickii*, J. E. Gray, Ill. Ind. Zool. ii. pl. 52. fig. 2 (1835).  
*Totanus indica*, J. E. Gray, tom. cit. pl. 52. fig. 1 (1835).  
*Philomachus pugnax* (L.), G. R. Gray, List of Gen. of B. p. 89 (1841).  
*Machetes optatus*, Hodgson in Gray's Zool. Misc. p. 86 (1844).  
*Machetes minor*, C. L. Brehm, Vogelfang, p. 320 (1855).

*Ruff*, male, *Reeve*, female, English; *Combattant*, French; *Combatiente*, Spanish; *Gambetta*, Italian; *Ghirviel*, Maltese; *Habib el tchibib*, Moorish; *Kampfhahn*, German; *Kamphaan*, Dutch; *Brushane*, Danish, Norwegian, and Swedish; *Suokukko*, Finnish; *Toroukhtann*, *Dratschounn*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 300, 305, 306; Werner, Atlas, *Gralles*, pl. 15; Kjærbo. Orn. Dan. taf. 34, Supp. taf. 15; Fritsch, Vög. Eur. taf. 38. fig. 1, taf. 43. figs. 4, 5; Naumann, Vög. Deutschl. taf. 190-193; Sundevall, Svensk. Fogl. pl. xxxix.; Gould, B. of Eur. pl. 328; id. B. of G. Brit. iv. pl. 61; Schlegel, Vog. Nederl. pls. 236, 237, 238.

♂ *ad. ptil. æst.* corpore suprâ griseo-fusco, nigro et rufescenti-ochraceo notato: uropygii lateribus albis: caudâ griseo-fuscâ castaneo et nigro notatâ: remigibus nigro-fuscis, rhachibus albis: tectricibus alarum cinereo-fuscis: facie papillis granulosis carneo-flavidis notatâ: colli plumis elongatis collare formatibus: capite et collo toto albis vix cervino-albido notatis: corpore subtus albo, pectore imo et hypochondriis nitidè nigro notatis: rostro nigro-fusco, ad basin carneo: iride fuscâ: pedibus sordidè ochraceis.

♀ *ad. ptil. æst.* minor, nec colli plumis elongatis: corpore suprâ pallidiore: pileo et nuchâ cinereo-fuscis nigro-fusco notatis: mento albo: gulâ, gutture et pectore pallidè cinereo-fuscis vix fusco notatis: corpore reliquo subtùs albo, hypochondriis fusco notatis.

♂ *ad. ptil. hiem.* feminæ similis sed major et coloribus saturatoribus.

*Juv. in ptil. autumn.* feminæ adultæ similis sed corpore suprâ plumis ochraceo-cervino marginatis: pileo et collo postico cervino et ochraceo lavatis: striâ superciliari cervino-albidâ: mento albo: gulâ, gutture et hypochondriis ochraceo-cervinis: corpore reliquo subtùs albo: pedibus fusco-cinereis.

*Adult Male in spring* (Archangel). Head and neck (the latter with the upper breast having the feathers elongated, forming a conspicuous ruff or tippet) white, slightly dotted with creamy buff; back, scapulars, and rump brown, varied with black, warm buff, and chestnut-ochreous; quills blackish brown, with white shafts; the wing-coverts ashy brown; sides of the rump nearly white; tail ashy brown, varied with chestnut-red and black; underparts white, the breast below the ruff and the upper flanks glossy blackish, marked with white; under tail-coverts slightly marked with black; face covered with warty yellowish tubercles; bill blackish brown, fleshy at the base; iris brownish black; legs yellowish brown. Total length about 12·5 inches, culmen 1·68, wing 7·1, tail 2·7, tarsus 2·05.

*Male in winter* (Darjeeling). Differs from the summer dress in entirely lacking the ruff and tubercles on the face; the chin is whitish, the throat and neck greyish brown, varied with dark brown.

*Adult Female* (Uleåborg, 26th June). Crown, nape, and upper parts sandy brown, marked with blackish brown, duller than in the male; wings and tail as in the male; chin whitish; throat and breast ashy brown, slightly marked with dark brown; rest of the underparts white, the upper flanks marked like the neck; no sign of a ruff on the neck. In size much smaller than the male, measuring—culmen 1·35 inch, wing 5·8, tail 2·35, tarsus 1·6.

*Young in first autumn dress* (Pagham, September). Head and neck pale buffy brown, somewhat inclining to sandy colour on the crown, which is also thickly sprinkled with black, owing to the dark centres of the feathers; forehead and fore part of the cheeks whitish, minutely speckled with dots of sandy colour; sides of the face and throat, including a very distinct eyebrow, white, with little spots of brown and sandy colour thinly distributed; back and scapulars brownish black with a purple gloss, with buff edgings to the feathers, this colour sometimes bordering on rust-colour; lower part of the back and rump greyish brown, with a slight bronzy gloss, all the feathers margined with pale brown, becoming somewhat more rufous on the upper tail-coverts; the lateral feathers of the upper tail-coverts white, grey at the base; least wing-coverts greyish brown with bronzy lustre, the pale margins to these small feathers very indistinct, but on the median coverts much more plainly edged with buffy white; primary- and greater coverts dark brown, with a distinct bronzy-green lustre, the latter margined with buff, and distinctly tipped with white, so as to form a distinct bar across the wing; quills greyish brown, paler on the inner web; shafts white, all the feathers under a certain light glossed with dark green, the secondaries edged and tipped with white, the innermost feathers very long and pointed, and very distinctly margined with buffy white; tail-feathers dark brown, with a very slight bronzy-green lustre, edged and mottled with buffy white towards the apices of the feathers, all of which are tipped with white, the shafts also of the latter colour; under surface of the body white; the lower part of the throat and fore part of the chest sandy buff; under wing- and tail-coverts white, the former mottled with greyish brown along the edge of the wing; bill blackish, with a faint tinge of flesh-colour at the base of the lower mandible; legs dark leaden-grey, with a tinge of brown; iris deep brownish black.

*Obs.* The variation in the coloration and markings of the nuptial plumes or ruff in the male is so great that one seldom sees any two nearly alike, except in the black and white varieties. I have described the latter, but have figured several other varieties. I have specimens in my collection with the ruff black, black barred with white and buffy white, chestnut-red, chestnut-red barred with black and marked with white, white, and white marked with pale brown and washed with creamy buff. Indeed the variation is almost endless, as may be seen in a very rich series in the collection of my friend Mr. G. Cavendish Taylor, who has for long been collecting varieties of this species in summer dress. One of these is very peculiar, having the pectoral ruff black marked with drop-shaped spots of ochreous yellow.

THE range of this Wader extends over the whole of Europe, except in the extreme north; and in Asia it has been met with as far east as Kamtschatka. In the winter season it ranges far south, and has been obtained in Africa as far south as the Cape of Good Hope.

Formerly it used to breed even commonly in some parts of England; but now it is almost extinct as a breeding species, though it occurs not unfrequently on passage. I have shot specimens on many parts of our south coast in the autumn; and it appears to be generally distributed during the seasons of passage in suitable localities. Mr. A. G. More, in his notes on the distribution of birds during the nesting-season, says (*Ibis*, 1865, p. 437) that, like the Black-tailed Godwit, the present species is "rapidly disappearing before the advance of cultivation and drainage. Montagu was informed that Ruffs were not uncommon in the fens about Bridgewater, in Somersetshire, before they were drained. In Suffolk the bird appears to have become quite extinct; but Mr. Stevenson says that a few pairs still breed in Eastern Norfolk, where, happily, they are strictly preserved. It is extinct in Huntingdon, Cambridge, and Northampton, and probably also in Lincolnshire. In Yorkshire the Ruff appears to have ceased to breed, though Mr. Reid remembered them to have been quite plentiful. Mr. Hancock and the Rev. H. B. Tristram tell me that the bird has become extinct in Durham, but still breeds occasionally in Northumberland." It is found now and again on inland sheets of water in our midland counties; and Lord Lilford informs me that it occasionally visits flooded meadows near Oundle, in Northamptonshire, usually in August; he adds that twenty or thirty years ago, he recollects, it used to be tolerably common in Whittlesea Wash in September and October. With regard to its occurrence in Norfolk, Mr. Stevenson writes (*B. of Norfolk*, ii. p. 263), "Hickling alone is visited annually by a few of these birds; but should they become exterminated, the race of Norfolk (may we not almost say of British?) Ruffs will have become extinct. Can nothing be done to secure, before it is too late, the same protection for our resident Waders as is about to be afforded to the sea-fowl on our coasts and the 'loons' on our inland waters? In this instance, I know, the lord of the manor does his utmost to protect the Ruffs and Reeves in his marshes; but so long as no actual penalty attaches to the robbery of the nests or the snaring of hen birds in the act of incubation, it is impossible to preserve effectually in such places. Idle hands will always be found ready to risk the trespass as long as cash or beer at the village public forms a tempting bait, with but little fear of detection. In my own notes for the last sixteen years I find frequent entries with reference to both eggs and birds brought up to Norwich for sale from the Hickling marshes; and in the summer of 1866, when there were an unusual number of nests, a corresponding supply of Reeves' eggs found their way into the hands of our birdstuffers. Two

evidently fresh laid, were shown me on the 16th of May, and four others, but slightly sat upon, on the 6th of June. I have also taken notes of some taken in other seasons during the latter months." In the Humber district it is recorded by Mr. Cordeaux as a regular autumn, but only an occasional spring visitant; and Mr. Hancock writes (B. of Northumb. & Durh. p. 119 (as follows:—"The Ruff is a rare spring and autumn migrant. Before Prestwich Car was drained this beautiful species was not by any means uncommon there in autumn, and occasionally appeared in large numbers. I have noted five captures of it in that locality, all in summer dress—namely, two males and three females; and I took, on the 3rd of June 1853, a nest with the full complement of eggs. I am informed by Mr. C. M. Adamson that another nest occurred in the same locality.

"The adult winter plumage is rarely met with in the district. I have only a single individual in this dress captured here; and I am indebted to Mr. C. M. Adamson for it; it was shot at Hauxley in the winter of 187 . The young in the first plumage have been frequently killed on the Newcastle Town Moor, and on the Northumberland coast.

"Mr. Selby says in his catalogue that he had 'killed several of the young birds and an adult in winter plumage, on the shore near Budle Bay and the slake or ooze interposed between the mainland and Holy Island, about the end of September or beginning of October.' It has been observed on Boldon Flats; and in May 1859 I saw at Gosforth Lake a pair of adult birds, male and female; the former had a white ruff.

"The Red-legged Sandpiper (*Tringa bewickii*, Montagu), figured and described by Bewick, is undoubtedly an adult Ruff without the collar of feathers. I have a male specimen, shot at Prestwich Car on the 18th of April, without a trace of the ruff, and in other respects agreeing with the figure and description of Bewick's *Tringa*, or Red-legged Sandpiper."

With regard to its range in Scotland I may quote from Mr. Robert Gray (B. of W. of Scotl. p. 307) as follows, viz. :—"Except in very few instances, and these chiefly in Ayrshire and Renfrewshire, I have never met with the Ruff in the western counties. It appears to affect the east coast principally, extending from Berwickshire to Orkney and Shetland. The trending of the Solway Firth seems to check its progress northward on the west; or, more correctly speaking, it leads it eastward from its line of flight. One or two occasionally cross and penetrate as far as the Clyde; but these are mere stragglers. The last one I examined—a plain and unobtrusive female, shot near Bowling in October 1869—was brought to Glasgow, as a great curiosity, by a keeper who had long been accustomed to shore-shooting in the estuary, but had never seen one before. Eastwards it occurs more frequently, and in greater numbers in Aberdeenshire than elsewhere. Mr. Harvie-Brown has seen and shot various specimens on the Forth at Grangemouth. Writing in September he informs me that he had shot two specimens in a forenoon. The occurrence of this remarkable bird in Aberdeenshire so frequently in autumn, after the breeding-season is over, is a circumstance which need excite but little surprise when it is borne in mind that large numbers breed in Scandinavia, and that the flocks there congregating for the autumnal journey would naturally touch first of all on the outlying shoulder of that country as the nearest land on their way southwards. On the other hand, the flocks appear both on the eastern and western shores of England; though, as we have seen, they shorten their route by following the course of the rivers running into the Solway, and speeding eastwards into Berwick

and East Lothian, whence they advance by easy stages to the estuaries of Aberdeenshire, their last halting-place before crossing the North Sea."

Though not uncommon in Orkney, it appears to be very rare in Shetland, where, so far as I can ascertain, it has only been twice recorded by Dr. Saxby, both occurrences being in September 1866.

According to Thompson it visits Ireland on passage, and is not uncommon in the autumn, but rare on the spring passage.

I do not find any record of its occurrence in Greenland; and it appears to have been only once met with in Iceland, at Reykjavik, early in September 1820. Nor is it found in the Færoes; but in Scandinavia it is common, and breeds, though chiefly in the northern portions of the country.

Mr. Collett informs me that it nests in Finmark up to the North Cape and Varanger fjord, these being its chief breeding-grounds; but a few breed on the Jotunfjeld and in the adjacent country. There is, however, nothing to show that it ever nests in Southern Norway; and it only appears near Christiania during the two seasons of passage.

It is common in Sweden, arriving in the southern districts in April and leaving in August. It does not breed in the southern districts, but nests commonly in the north, especially in portions of Lapland.

It breeds commonly in Finnish Lapland and the north of Finland, but only rarely in Central and Southern Finland. I found large numbers in the nesting-season near Uleåborg; and it is also common near Wasa and Gamla Karleby, but does not breed in any numbers. It is also said to have bred near Åbo, in Haliko parish.

According to Mr. Sabanäeff it breeds throughout the northern parts of Russia, in the Governments of Jaroslaf, Tver, Kostroma, Vladimir, and the northern portion of the Moscow Government. He also met with it in the Ural, where it is common in the marshes of the south-eastern slopes. It probably breeds throughout the Perm Government. Artzibascheff says that he saw immense flocks in the Calmuck steppes, especially on the shores of Lake Barbantzak, where they were nesting. I have received many specimens from Archangel, where, Messrs. Alston and Harvie-Brown write (*Ibis*, 1873, p. 69), "Ruffs and Reeves were very abundant, especially on the outer islands. We obtained eggs on the 22nd and 26th of June, nests having been found both in marshy ground and in sand amongst bent. Young birds, with slight traces of down remaining on the neck, were obtained on the night of 16-17th July." Messrs. Seebohm and Harvie-Brown, who met with it on the Petchora, write (*Ibis*, 1876, p. 292) as follows:—"A Ruff was brought to us for sale at Ust Zylma on the 30th May; and when we visited the marsh behind Habariki, on the 3rd, 4th, and 5th June, Ruffs were going in small flocks. At the latter locality we procured the first eggs, on the 12th June. Descending the river we saw Ruffs at their 'hills' on the 17th June, and procured eggs as late as the 27th on an island opposite Stanavoialachta. Flocks of Ruffs were seen frequenting the marshy estuary of a small river, on the tundra opposite Alexievka, on the 9th July; and the autumn plumage was fully assumed by the 29th July, when we shot a Ruff at Dvoynik out of a flock in the same plumage in which they are shot in this country in September. Ruffs and Reeves were abundant on the islands, but comparatively scarce, or local, on the tundra." Mr. Taczanowski says that it breeds in tolerable

numbers in the same localities as the Black-tailed Godwit, and in other localities it is only seen on passage. Some seasons the young are very numerous on the autumnal passage.

In North Germany it occurs almost only on passage in the interior, but breeds commonly on most parts of the coast. It has, however, according to Borggreve, been met with breeding in Anhalt, Posen, and in the Oderbruch, near Schwedt; Gloger states that it occasionally nests in Silesia; and Von Homeyer writes (*J. f. O.* 1872, p. 338) that it breeds, far from the coast, in Lausitz and Pomerania.

It arrives in Denmark late in April, the males arriving rather earlier than the females, and leaves again early in September. It breeds most numerous in Jutland and the west coast of Schleswig, on Kareholm, also in Randersfiord, on Musholm, Omö, Agersö, Möen, Rödsand, on several islands between Fyen and Ærö, on Enderlave, Læsö, and in many other localities.

It breeds in Holland in some numbers, arriving in April and leaving again in August and September. Mr. H. Durnford, in his *Notes on North-Frisian ornithology*, writes (*Ibis*, 1874, p. 399) as follows:—"Common on Sylt, Amrum, and Föhr, having its nest on a tussock in the wettest places. We observed some noble battles amongst the Ruffs, who, unless fighting, stand bolt upright, like Owls. When engaged in combat they stoop and charge like Gamecocks. The Reeves are silent except when they have young; then they will fly slowly round one, with a low guttural note. On Föhr we observed one which, from its anxiety, betrayed the fact of its having young. We retired behind the sea-wall, glasses in hand; and after waiting a few minutes, three young ones ran out from the grass, and then a fourth. Leaving my brother to watch, I jumped up and ran to catch them. They all scuttled away; and I could only secure one, the others escaping in the long grass. However, we again retired to watch, behind the bank, and had not been there half a minute before they ran out again and began to feed with their mother. I merely mention this incident to show their bold and fearless nature. We did not observe this species on the mainland." In Belgium the present species is only found on passage, and is chiefly met with in the province of Antwerp, in Campine, and especially on the Meuse; and in France it is also chiefly seen on passage, but a few breed in the north of that country. It is said to occur in Portugal, and is numerous in some parts of Spain. Lord Lilford writes to me, "it occurs in the spring on the Lower Guadalquivir, and is to be met with commonly in the market of Seville in March. I cannot positively say whether it breeds in the marisma or not; but I have had eggs brought to me from that district which I can hardly assign to any other species." Mr. Howard Saunders says that it is less common in the spring than it is in the autumn; and Colonel Irby writes (*Orn. Str. Gibr.* p. 171) as follows:—"The greater number of Ruffs pass northward through Andalucia in April; but flocks occasionally occur during January, February, and March, some passing as late as the last week in May. The males, or 'Ruffs,' are then in their inconvenient-looking nuptial plumage; and although I have not heard of their nesting so far south, it is not unlikely that such is the case."

It occurs in Italy on passage, and appears to be also not so uncommon in Sardinia as Salvadori and Cara state, as the latter does not record it, and the former only once met with it there; but Mr. A. B. Brooke writes (*Ibis*, 1873, p. 339) as follows:—"On the large wide sandy plain dotted over with small stagnant pools, between the stagno of S. Giusta and the sea, I met with numerous flocks of Ruffs, varying in number from three or four up to as many as twenty,

during the first week in March. They were very restless, flying backwards and forward from one pool to another, feeding hurriedly in a close compact body. Their flight is extremely rapid, turning and twisting, showing alternately the light and dark sides in the same manner as Dunlins &c. None of the specimens I shot showed any sign of a ruff; they were all males." In Malta, Mr. Wright says, it "arrives early in spring, and is rather common in March and April. I have seen it rarely as early as February. Repasses towards the end of September, October, and November. Individuals in the full nuptial dress have been taken; but they are very uncommon." Lord Lilford informs me that he found it common in Epirus on the spring passage; and it is said to be generally distributed throughout Greece during the seasons of migration, but has not been known to breed there. It is found throughout Southern Germany on passage; and Dr. Fritsch states that it is said to breed in some parts of Bohemia. It is found in Southern Russia, Turkey, and Asia Minor, and doubtless also in Palestine on passage, though it is not included by Canon Tristram; and Lord Lilford informs me that he met with it in Crete in March, and in Cyprus in April.

In North-east Africa it is chiefly met with as a winter visitant. Mr. C. W. Wyatt obtained one near Tor, in Sinai; and Captain Shelley writes (B. of Egypt, p. 246):—"The Ruff is very abundant throughout Egypt and Nubia from August till May, more especially in the Fayoom and the Delta, where it may generally be met with in large flocks, frequenting the flooded fields in preference to the marshes." Von Heuglin says that he observed the Ruff at almost all seasons of the year in North-east Africa, and, curiously enough, even during the nesting-season. In April 1862 he observed it south-west of the source of the Gazelle River in flocks; in July and August he shot specimens near the bitter lakes north of Suez. In the autumn, winter, and spring it is very numerous in Egypt, Nubia, Takah, and East Kordofan; and in Abyssinia it was observed at an altitude of 10,000 feet. It is found throughout Algeria in damp localities, chiefly during the winter; and in Favier's notes on the ornithology of Tangier, he states (*vide* Colonel Irby) that "this species is only observed near Tangier when on migration, crossing to Europe during March, returning in July, August, and September. Those which return in the last days of July still exhibit traces of the breeding-plumage." It has been recorded from Madeira by Vernon Harcourt, and on the west side of Africa, from Senegambia, Casamanse, and Benguela. According to Mr. Andersson (B. of Damara Land, p. 304), "This bird generally appears in Damara Land with the return of the rainy season, when it is not uncommon, and leaves again before the ruff of the male bird is put forth; but I have reason to believe that it is to be met with in the Lake-regions during the intervening period. It is chiefly found inland, and but rarely on the coast. It feeds on insects and worms, for which it seeks in moist and humid situations; but during the rainy season, when food is abundant, it may be found almost everywhere. It is a comparatively tame bird, and is generally to be observed in small flocks of from three to a dozen individuals—such flocks generally consisting of females with perhaps now and then a male, which is easily distinguished by its greater size." Mr. E. L. Layard says (B. of S. Afr. p. 329) that he has shot it on the flats at the Cape of Good Hope, and received it from Colesberg, the Knysna, and Traka in the winter season; Mr. Ayres has sent it from Natal and the Transvaal; and Mr. T. E. Buckley observed it in large flocks on his way down through the Transvaal.

In Asia it has been observed across to Kamtchatka and southward to Ceylon. Eichwald records it from the Caspian; and Dr. Jerdon writes that it visits India during the cold season in large numbers. "In Oudh and Kumaon it is" (Colonel Irby writes, *Ibis*, 1861, p. 241) "found in immense flocks in the cold season; I have seen some flocks of certainly not less than from three to four hundred on the rice-stubbles near Khyreegur; those which I shot were full of rice, and were well worth shooting for the table. I never saw one with a ruff; but Mr. Blyth has kept them alive in Calcutta till the ruff appeared." It appears only to have been once obtained in Ceylon, a specimen having been shot in March last near Kirinde, on the south-east coast, by Captain Wade, 57th Regiment, as recorded by Captain Legge (*Ibis*, 1878, p. 204).

Passing north again, I find that, according to Dr. Henderson (*Lah. to Yark.* p. 287), "Ruffs and Reeves were very common in the immediate neighbourhood of the city of Yarkand, where also they undoubtedly breed. Numerous specimens obtained between the end of August and the beginning of September exhibited more or less of the rich colouring of the breeding-season; but the males had quite lost their ruffs." It ranges tolerably far north in Siberia. Von Middendorff says that he saw flocks on the 11th August, in 75° N. lat., which had probably bred on the Arctic ocean. Numbers arrived on the Boganida on the 27th May, and on the 15th June eggs were found. Von Schrenck never observed it in the spring in South-east Siberia, and is sure that it does not occur there on the Tarei-nor; but large flocks were seen in the autumn near Durulungui, on the Onon, where they appeared on the 10th August. Dr. Dybowski says (*J. f. O.* 1873, p. 103) that it is rather rare than otherwise in Kultuk (where it arrives early in September), but it is more numerous in the district of Darasun. I do not find it recorded from either China or Japan; nor did Colonel Przevalsky meet with it in Mongolia.

It is recorded from the Nearctic Region as a rare straggler, having occurred, Professor Baird says (*B. of N. Am.* p. 737), several times on Long Island; and according to Herr von Pelzeln (*Ibis*, 1875, p. 332), a single example was obtained by Herr Münzberg in Spanish Guiana, in the Neotropical Region.

In general habits, except during the pairing-season, the present species does not differ much from the other allied Waders, and resembles perhaps the Totanidæ more than any others. Its flight, when not encumbered with the ruff, is tolerably swift and direct; but the ruff appears to be a considerable hindrance; and it is always careful to avoid getting the wind behind these feathers, for it is then scarcely able to steer itself. Its note is low, and is seldom heard except during passage, and consists of tones like the syllables *kack, kack, kick, kack*. Unlike most of the Waders, it is a very tough and hardy bird, and will often get away with a good deal of shot in it; and when wounded and caught alive it will frequently recover and thrive well. When caught it soon becomes reconciled to captivity, and almost at first feeds greedily.

When the breeding-season commences the males collect (or "hill," as it is called) and fight, probably for the possession of the females; but though their actions are fierce, and they appear to contend with great ardour, they seldom harm one another. They are polygamous; but, as a rule, it would seem that a male shows greater preference for, and attaches himself more especially to one favourite female. During the season when the males "hill" they are most easily caught; and in our fen-districts large numbers used formerly to be caught and fattened for the table. Montagu (*Orn. Dict.* 2nd ed. pp. 442-446) gives some interesting notes on this subject,

which I transcribe as follows:—"The trade of catching Ruffs is confined to a very few persons, and at present scarcely repays their trouble and expense of nets. These people live in obscure places on the verge of the fens and are found out with difficulty; for few if any birds are ever bought but by those who make a trade of fattening them for the table; and they sedulously conceal the abode of the fowlers—so much so, that by no art could we obtain from any of them where they resided; and in order to deceive us, after evading our entreaties, they gave us instructions that led us in quite a contrary direction. The reason of all this was obvious; for after much labour and search, in the most obscure places (for neither the innkeepers nor other inhabitants of the towns could give any information, and many did not know such a bird was peculiar to their fens), we found out a very civil and intelligent fowler, who resided close to Spalding, at Fen-gate, by name William Burton (we feel a pleasure in recording his name, not only from his obliging nature, but for the use of others in similar pursuits); and, strange to say, although this man had constantly sold Ruffs to Mr. Towns, a noted feeder, hereafter more particularly noticed, as also to another feeder, at Cowbit, by the name of Weeks, neither of those persons could be induced to inform us even of the name of this fowler. The reason, however, was evident, and justly remarked by Burton; for he obtained no more than ten shillings per dozen, whereas Weeks demanded thirty shillings for the like number he had the same day bought of Burton. The season was far advanced, and we were obliged to buy some at that price of Weeks; for Burton could not then catch us as many as were required.

"At this time we were shown into a room where there were about seven dozen males and a dozen females; and of the former there were not two alike. This intrusion to choose our birds drove them from their stands, and, compelling some to trespass upon the premises of others, produced many battles.

"By the feeder we learned that two guineas a dozen was now the price for fattened Ruffs; and he never remembered the price under thirty shillings when fit for table.

"Mr. Towns, the noted feeder at Spalding, assured us his family had been a hundred years in the trade, and boasted that they had served George the Second, and many noble families in the kingdom. He undertook, at the desire of the late Marquis of Townsend, when that nobleman was Lord-Lieutenant of Ireland, to take some Ruffs to that country, and actually set off with twenty-seven dozen from Lincolnshire, left seven dozen at the Duke of Devonshire's at Chatsworth, continued his route across the kingdom to Holyhead, and delivered seventeen dozen alive in Dublin, having lost only three dozen in so long a journey, confined and greatly crowded as they were in baskets which were carried upon two horses.

"Nothing can more strongly evince the hardy constitution of these birds than the performance of such a journey, so soon after capture, and necessarily fed with a food wholly new to them; and yet a certain degree of care and attention is requisite to preserve, and more especially to fatten them; for out of the seventeen dozen delivered at the Castle of Dublin, not more than two dozen were served up to table, doubtless entirely owing to a want of knowledge or attention of the feeder under whose care they had been placed.

"The manner of taking these birds is somewhat different in the two seasons. In the spring the Ruffs *hill*, as it is termed; that is, they assemble upon a rising spot of ground contiguous to where the Reeves propose to deposit their eggs; there they take their stand at a small distance

from each other, and contend for the females, after the nature of polygamous birds. This hill, or place of resort for love and battle, is sought for by the fowler, who, from habit, discovers it by the birds having trodden the turf somewhat bare, though not in a circle (as usually described).

“When a hill has been discovered the fowler repairs to the spot before the break of day, spreads his net, places his decoy-birds, and takes his stand at the distance of about 140 yards or more, according to the shyness of the birds.

“The net is what is termed a single clap-net, about seventeen feet in length and six wide, with a pole at each end. This, by means of uprights fixed in the ground, and each furnished with a pulley, is easily pulled over the birds within reach, and rarely fails taking all within its grasp; but in order to give the pull the greatest velocity the net is (if circumstances will permit) placed so as to fold over with the wind: however, there are some fowlers who prefer pulling it against the wind for Plovers. As the Ruffs feed chiefly by night, they repair to their frequented hill at the dawn of day nearly all at the same time; and the fowler makes his first pull according to circumstances, takes out his birds, and prepares for the stragglers who traverse the fens, and who have no adopted hill; these are caught singly, being enticed by the stuffed birds.

“Burton, who was before mentioned, never used any thing but stuffed skins, executed in a very rude manner; but some fowlers keep the first Ruffs they catch for decoy-birds; these have a string about two feet long tied above the knee and fastened down to the ground. The stuffed skins are sometimes so managed as to be movable by means of a long string, so that a jerk represents a jump (a motion very common amongst Ruffs, who at the sight of a wanderer flying by will leap or flirt a yard off the ground), by that means inducing those on wing to come and alight by him.

“The stuffed birds are prepared by filling the skin with a whisp of straw tied together, the legs having been first cut off, and the skin afterwards sewed along the breast and belly, but with no great attention to cover the straw beneath; into this straw a stick is thrust to fix it into the ground, and a peg is also thrust through the top of the head and down the neck into the stuffing or straw body; and the wings are closed by the same process. Rough as this preparation is, and as unlike a living bird as skin and feathers can be made, it answers all the purpose.

“When the Reeves begin to lay, both those and the Ruffs are least shy, and so easily caught that the fowler assured us he could with certainty take every bird on the fen in the season. The females continue this boldness; and their temerity increases as they become broody; on the contrary, we found the males at that time could not be approached within the distance of musket-shot, and consequently were far beyond the reach of small shot.

“We were astonished to observe the property [*sic*] that these fowlers have acquired of distinguishing so small an object as a Ruff at such an immense distance, which, amongst a number of tufts or tumps, could not by us be distinguished from one of those inequalities; but their eyes had been in long practice of looking for the one object.

“The autumnal catching is usually about Michaelmas, at which time few old males are taken, from which an opinion has been formed that they migrate before the females and young. It is, however, more probable that the few which are left after the spring fowling, like other polygamous birds, keep in parties separate from the female and her brood till the return of spring. That some old Ruffs are occasionally taken in the autumnal fowling, we have the

assertion of experienced fowlers; but we must admit that others declare none are taken at this season. It must, however, be recollected that in the autumn the characteristic long feathers have been discharged, and consequently young and old males have equally their plain dress; but the person who assured us that old male birds were sometimes taken at that season, declared it was easy to distinguish them from the young of that summer."

The nest of the present species is placed on the ground in a swampy locality, usually rather far from the hills where the males assembled than near to these; and the females, or Reeves, do not breed in colonies. The nest resembles that of the Redshank; and, like that bird, it usually hides its nest with some care. The eggs, four (or sometimes only three) in number, are in general character not unlike those of the common Snipe, but are larger and more richly marked. The ground-colour is pale olivaceous on stone-buff; and the surface-markings, which are large, and are most diffused about the larger end, are rich umber-brown, there being also a few purplish grey or pale brown shell-spots. In size those in my collection vary from  $1\frac{2}{40}$  by  $1\frac{7}{40}$  to  $1\frac{3}{40}$  by  $1\frac{1}{40}$  inch. I have seen large Reeve's eggs doing duty in some collections for those of the Double Snipe: but a practised eye can at once detect them; for the markings are somewhat different, and they are rather greener in general coloration than the eggs of the Double Snipe.

The food of the present species consists of insects and insect-larvæ of various kinds, grasshoppers, worms, &c. &c.; and it resembles the Peewit not a little both in the nature of its food and the mode of procuring it. It is a greedy feeder, and soon accustoms itself to vegetable food when kept in confinement, and becomes very tame.

The specimens figured are:—on the one Plate the males in full summer dress, showing different varieties in coloration of the ruff; and on the second Plate the female and young in down. As the male in winter dress differs so little from the female, except in size, I have not deemed it necessary to figure it.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♀ *ad*, *b*, *c*, ♂ *juv.*, *d*, ♀ *juv.* Pagham, Sussex, September 12th, 1871 (*A. Grant*). *e*, *f*, ♂ *ad*. Jutland, spring of 1863. *g*, *juv.* Boel, Jutland, 1867 (*A. Benzon*). *h*, ♀. Jokstuen, Norway, June 9th, 1872 (*Collett*). *i*, *k*, *l*, *m*, ♂. Archangel, spring (*Piottuch*). *n*, ♂. Archangel, May 3rd, 1874. *o*, ♂. May 23rd, 1876 (*Piottuch*). *p*, *q*, ♂ ♀. Central Russia, 1868 (*Sabanäeff*). *r*, *s*, ♂ ♀. Darjeeling, India, winter (*Whitely*).

*E Mus. C. A. Wright.*

*a*, ♂. Malta, May 26th, 1865 (*C. A. W.*). *b*, ♀. Malta, April 23rd, 1869 (*C. A. W.*). *c*, ♀, *d*, ♀. May 14th, 1869 (*C. A. W.*). *e*, ♀, *f*, ♀. Malta, May 27th, 1869 (*C. A. W.*).

*E Mus. G. C. Taylor.*

*a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, *x*, *y*, *z*, *aa*, ♂. Leadenhall Market, spring plumage (*G. C. T.*).



## Genus CALIDRIS.

*Tringa* apud Brisson, Orn. v. p. 236 (1760).

*Tringa* apud Linnæus, Syst. Nat. i. p. 251 (1766).

*Charadrius* apud Linnæus, tom. cit. p. 255 (1766).

*Calidris*, Cuvier, Leç. d'Anat. Comp. i. tabl. ii. (1800).

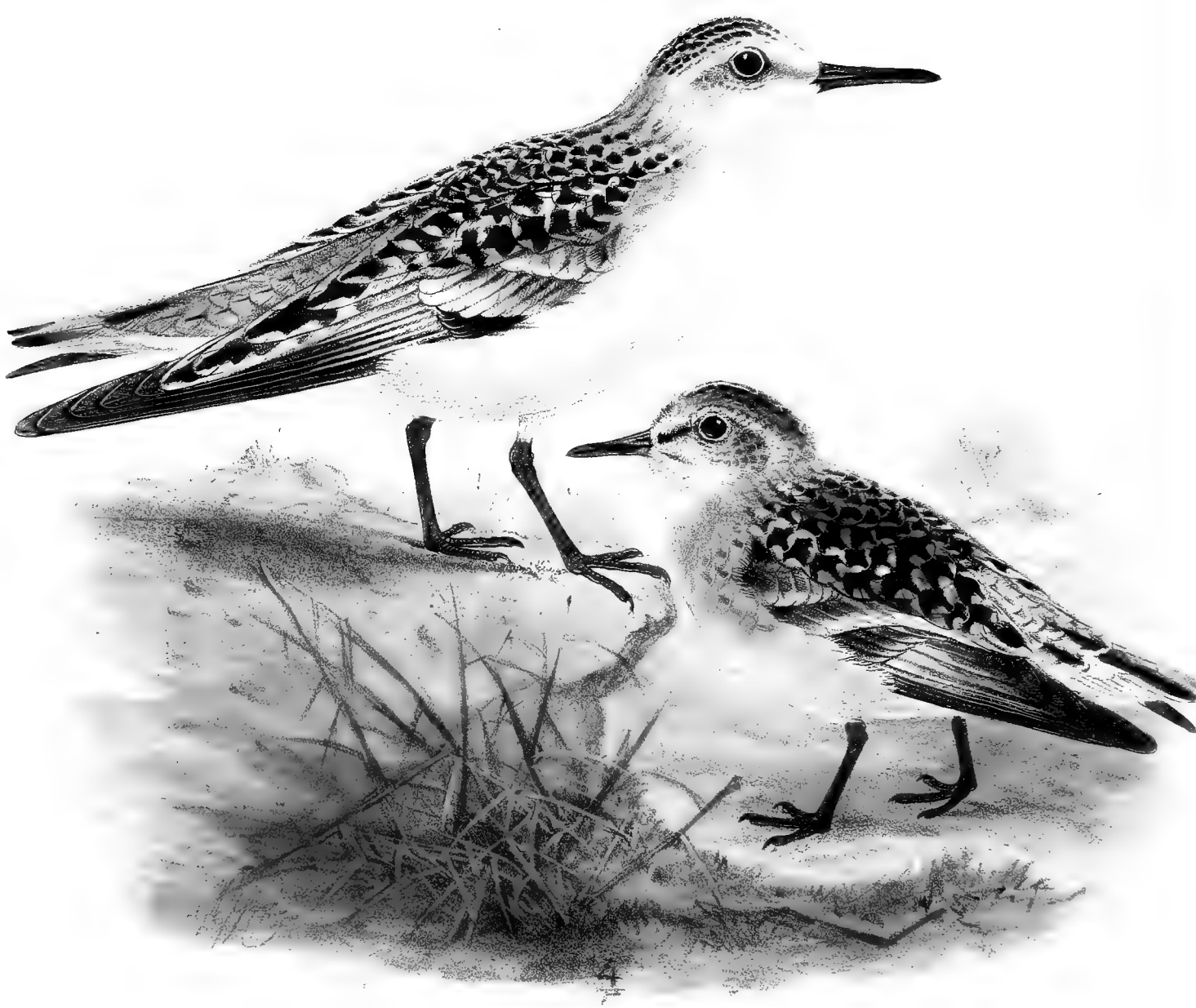
*Arenaria* apud Bechstein, Gemeinn. Naturg. Vög. Deutschl. 2nd ed. iii. p. 368 (1809).

ONLY one species is referred to this genus, viz. our common Sanderling, which is a very widely distributed bird, being found in the Palæarctic, Ethiopian, Oriental, Nearctic, and Neotropical Regions, its exact range, so far as it is known, being given in the following article. It is essentially a shore-bird, frequenting the sandy or muddy portions of the coast, especially muddy estuaries. It runs with ease and rapidity, and is strong on the wing. It passes the breeding-season in the arctic regions, migrating southward at the approach of winter. It makes its nest on the ground, and deposits four eggs, which resemble miniature Curlew's eggs.

*Calidris arenaria* has the bill about as long as the head, rather slender, straight, compressed, the tip rather enlarged and obtuse, the nasal groove very long, extending nearly to the end; nostrils small, linear, basal; wings long, pointed, the first quill longest; tail short, doubly emarginate; legs rather short, slender, the tibia bare for some distance; tarsus scutellate; toes small, the hind toe wanting; claws small, curved, compressed, obtuse.





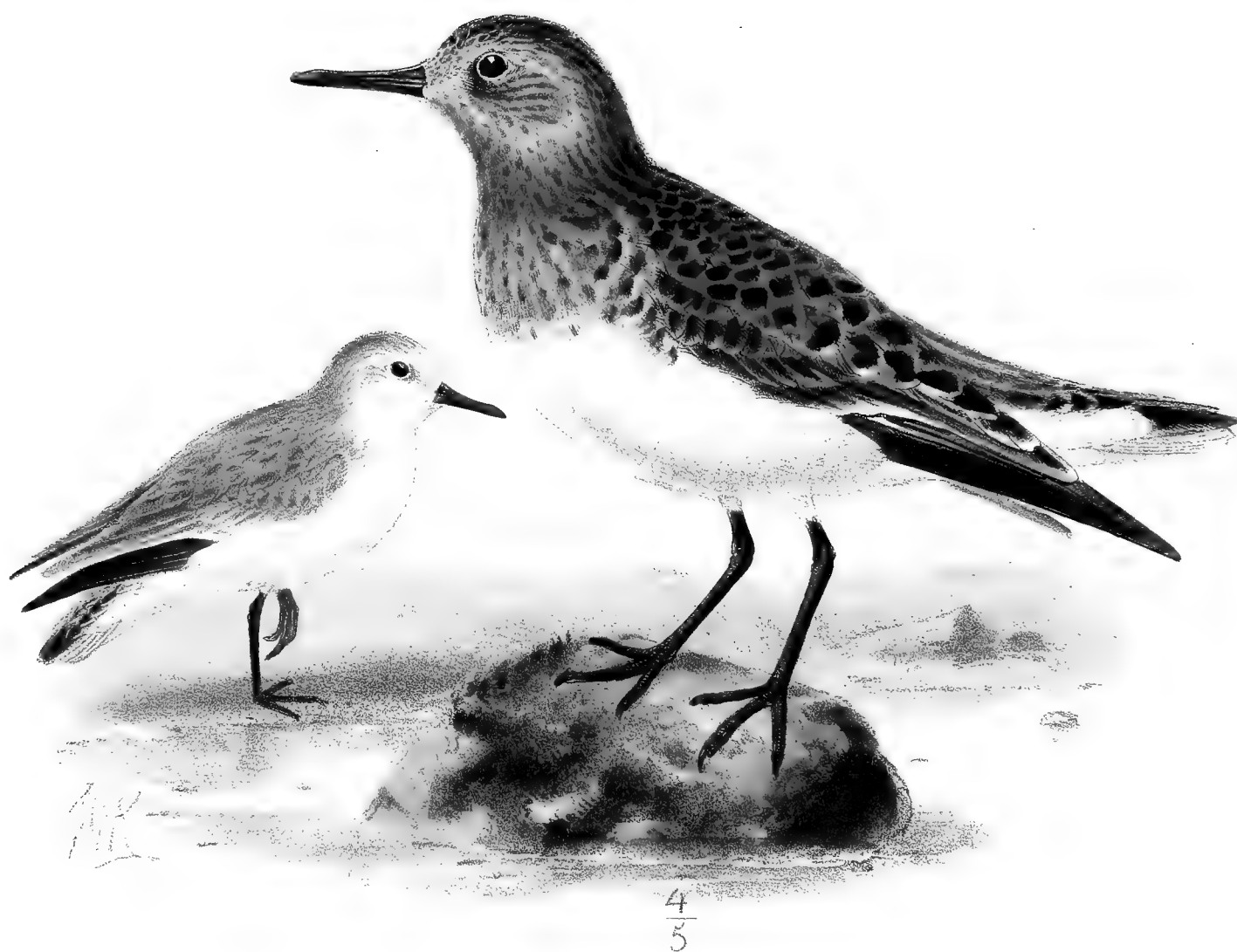


J G Keulemans lith

M & N Hanhart imp.

SANDERLING  
YOUNG





SANDERLING.  
*ARENARIA CALIDRIS.*

## CALIDRIS ARENARIA.

(SANDERLING.)

- Tringa calidris grisea minor*, Briss. Orn. v. p. 236, pl. xx. fig. 2 (1760).  
*Tringa arenaria*, Linn. Syst. Nat. i. p. 251 (1766).  
*Charadrius calidris*, Linn. Syst. Nat. i. p. 255 (1766).  
*Ruddy Plover*, Lath. Syn. iii. p. 195 (1785).  
*Charadrius rubidus*, Gmel. Syst. Nat. i. p. 688 (1788, ex Lath.).  
*Calidris*, Cuv. Leçons d'Anat. Comp. tom. i. tabl. ii. (1800).  
*Arenaria vulgaris*, Bechst. Orn. Taschenb. p. 462 a, pl. 39 (1802).  
*Arenaria grisea*, Bechst. Gemeinn. Naturg. Vög. Deutschl. 2nd ed. iii. p. 368 (1809).  
*Arenaria calidris* (Linn.), Meyer, Taschenb. deutsch. Vogelk. ii. p. 326 (1810).  
*Tryngra tridactyla*, Pall. Zoogr. Rosso-As. ii. p. 198 (1811).  
*Calidris arenaria* (Linn.), Leach, Syst. Cat. Mamm. & B. Brit. Mus. p. 28 (1816).  
*Calidris rubidus* (Gm.), Vieill. Nouv. Dict. xxx. p. 127 (1819).  
*Calidris tringoides*, Vieill. Gal. des Ois. iii. p. 95, pl. 234 (1825).  
*Calidris grisea* (Bechst.), C. L. Brehm, Vög. Deutschl. p. 674 (1831).  
*Calidris americana*, C. L. Brehm, Vög. Deutschl. p. 675 (1831).  
*Calidris mülleri*, C. L. Brehm, Vogelfang, p. 318 (1855).
- Sanderling variable*, French; *Piovanello tridattilo*, Italian; *Medrouan*, Moorish; *Ufer-Sanderling*, German; *Drieteenige strandlooper*, Dutch; *Foranderlig Selning*, Danish; *Sanderla*, Icelandic; *Sandlöber*, Norwegian; *Sandlöpare*, Swedish; *Morskoi-Sujok*, Russian.

*Figuræ notabiles.*

Kjærbo. Orn. Dan. taf. 34; Fritsch, Vög. Eur. taf. 33. fig. 7; Naumann, Vög. Deutschl. taf. 182; Sundevall, Svensk. Fogl. pl. 76. fig. 3; Gould, B. of Eur. pl. 335; id. B. of G. Brit. iv. pl. 66; Schlegel, Vog. Nederl. pl. 235; Roux, Orn. Prov. pl. 270; Audub. B. of Am. pl. 338; Wilson, Am. Orn. pl. 58. fig. 3, and pl. 59. fig. 4; Vieill. *l. c.*; Bechst. *l. c.*

*Ad. ptil. æst.* pileo, nuchâ et corpore suprâ nigro et ferrugineo variegatis: uropygio sordidè cinereo, nigricanti notato: caudâ cinereâ, rectricibus centralibus nigricanti-cinereis: remigibus primariis extûs nigricantibus et in pogonio interno albicantibus, secundariis albis saturatè cinereo terminatis: tectricibus alarum saturatè cinereis, albicanti marginatis et vix ferrugineo notatis: capitis lateribus, gutture et pectore superiore pallidè ferrugineis, nigro notatis: corpore reliquo subtûs albo: rostro et pedibus nigris: iride fuscâ.

*Ad. ptil. hiem.* corpore suprâ pallidè cinereo, indistinctè saturatè cinereo striato: alis et caudâ sicut in ptilosæ æstivali picturatis sed pallidioribus: fronte, capitis lateribus, gutture et corpore subtûs albis.

*Adult in summer* (Norfolk coast). Crown, nape, back, and scapulars richly varied with black and rusty red, the centre of the feathers being black and the margins rusty red; rump dull ashy grey, marked with blackish grey, some of the upper tail-coverts coloured like the back; tail grey, the central rectrices blackish grey, and the outermost ones nearly white; quills blackish, the shafts white, and on the inner web externally and towards the base nearly white, the short secondaries white on the basal, and dark grey on the terminal portion; wing-coverts dark ashy grey, edged with light grey or dull white, and slightly marked with rufous; sides of the head, throat, and upper breast light rufous, marked with black; rest of the underparts pure white; bill and legs blackish; iris dark brown. Total length about 7 inches, culmen 1.15, wing 4.85, tail 2.05, tarsus 1.0.

*Adult in winter* (Baluchistan, 22nd January). General colour of upper parts light grey, and of underparts white, without any trace of rufous; upper parts generally light cinereous, the feathers centrally with darker stripes; wing and tail as in the summer dress, but the grey is lighter, and there is no trace of rufous in the former; forehead, sides of the head, in front of the eye, throat, and entire underparts pure white.

*Immature bird in autumn plumage* (New Jersey). Crown blackish, marked with yellowish white; sides of the head white, faintly streaked with grey; a small black mark before the eye; upper parts black, spotted and marked with white and pale buffy white; upper tail-coverts washed with brownish buff; otherwise as in winter dress.

*Young in half down* (Grinnell Land, lat. 82° 50' N., 8th August). Differs from the young in autumn dress in having the upper parts much darker, the markings smaller, and warm rufous buff instead of white; the head, throat, and neck have remains of down on them; and the lower throat and sides of the neck are washed with warm buff.

LIKE the Knot and the Grey Plover, the Sanderling passes the breeding-season far north in both the Old and the New World, migrating southward as soon as the young are able to leave, and, during the winter season, straggling as far south as Southern Africa, and to Chili on the American continent.

With us in Great Britain it is only found during passage and in winter, more rarely, however, at the latter season, as the major portion of those which visit our shores appear to pass further south for the winter. I have shot specimens on various parts of the south coast of England, where it is met with regularly; and on the east coast it is also of not unfrequent occurrence. In the Humber district, Mr. Cordeaux states (B. of Humber Dist. p. 98), it "arrives in August, and occasionally as early as the last week in July. They may generally be found in greater or less numbers on the coast during the winter and throughout the following spring, departing finally for their distant breeding-stations in the far north, wherever these may be, towards the end of May; and as the old birds accompanied by their young are back with us in August, it leaves but a short time for the duties of incubation and the growth of the young." Mr. J. Hancock says that it is plentiful on the coasts of Northumberland and Durham in autumn, but much rarer in the winter. He names an instance of one having been shot in the summer of 1833 or 1834, and eggs supposed to have belonged to it having been taken; but, as he says, there must have been some mistake about it. He says that he has shot this species in full summer dress at Burgh Marsh, Cumberland, on the 30th of May, at which time it was in flocks.

According to Mr. Robert Gray (B. of W. of Scotl. p. 261), it is "a very common shore bird on the west of Scotland, especially on its arrival from its breeding-haunts in the north. On the outer islands it is plentiful on the sands at low tide between Benbecula and North Uist towards the end of August, by which time it has completely assumed the winter plumage. It is never," he adds, "so far as I am aware, seen at this season with even the remains of its summer dress—a contrast to the Dunlin and Turnstone, both of which occur (in the same place with the Sanderling) clad in nearly as brilliant plumage as at the height of the breeding-season. It is a common species in autumn on the Ayrshire coast, but disappears from these shores after a few weeks' residence. In early spring it returns to our estuaries and salt-water lochs, and has then changed its colour. Stray birds are seen occasionally so late as the beginning of June; but this depends altogether on the state of the season." Dr. Saxby says that it seldom remains in Shetland more than a few days at the two seasons of passage. Formerly he used to think it might breed there, as he has seen it in the north of Uist in June, and even as late as the commencement of July; but later investigation has convinced him that such is not the case.

In Ireland the Sanderling is occasionally met with in autumn and winter on most parts of the coast where the shores are flat.

In Greenland, Professor Newton states, it is scarce, and is said not to breed further south than lat.  $68^{\circ}$  N., but the young have been obtained at Godthaab. It was found on the east coast by Graah, and by the German expedition on Sabine Island, where it was breeding; and it is said to have been found breeding in considerable numbers on the Parry Islands. Captain H. W. Feilden, naturalist to the late Arctic expedition, sends me the following note on the present species, viz.:—"We found the Sanderling not uncommon along the shores of the Polar basin during the summer, and first noticed it on the 5th June, 1876, flying in company with Knots and Turnstones. I found a nest on the 24th June, in lat.  $82^{\circ} 33'$  N., containing two eggs, on which the male bird was sitting. In the month of August we saw several family parties of this species on the shores of Robeson's Channel; and the young birds were then hardly able to fly. Dr. Bessels informs me that he procured many nests of the Sanderling near Thank-God Harbour in lat.  $81^{\circ} 38'$  N." Professor Newton says, "in Iceland it is possibly more common than has been thought. Faber, and after him Mr. Procter, observed it on Grimsey, where it has been said to breed. . . . In 1858 I saw several in the south-west, and shot a female with a very backward ovary, on the 21st May, at Bæjasker. Mr. Fowler saw it in 1862 at Akranes." Captain Feilden says that he did not see it during his stay in the Færoes; but Wolley mentions having seen a pair there towards the end of June 1849. On the shores of Scandinavia it is met with in spring and autumn; and Mr. R. Collett informs me that it occurs on passage all along the west coast of Norway, and in some localities is very numerous in the autumn. This is especially the case in Jæderen, one of the most suitable places for Waders, a flat, sandy shore south of Stavanger; and here flocks of the present species are to be seen with Sandpipers, Plovers, Ruffs, and Godwits late in August, leaving in September. It is usually seen in separate flocks, but sometimes together with other Limicolæ. In other parts of the coast it is rarer, and is seldom seen in the interior. In Finmark it is, on the whole, rare. Lilljeborg observed it at Tromsø in August. All those shot by Mr. Collett in the autumn were in full autumn dress, and usually in immature plumage. In the spring of the year it is much less numerous than in the

autumn. Nilsson says that it occurs in the autumn and winter both on the east and west coasts of Sweden, and also on Öland and Gottland, and he observed it in Skåne quite late in the season, at the commencement of winter. I find no record of its occurrence on the Baltic coasts of Finland; but on the shores of the Arctic ocean, in North Russia, it is found here and there, and occurs on Novaya Zemlya, where, however, Von Heuglin states, it is rare. Messrs. Seebohm and Harvie-Brown, who obtained it in North Russia, write (*Ibis*, 1876, p. 308) as follows, viz. :—“On the Golaievskai Islands, at the entrance of the Petchora Gulf, we found Sanderlings in small parties associating with Dunlins, and feeding on the low wet sandbanks, which are only a foot or so above the level of the high tide, and procured a few specimens already beginning to undergo the autumnal moult. Afterwards at Dvoinik a few more were obtained; but we failed to discover their breeding-places. Had our visit to the Golaievskai Islands not been so hurried, and had we found time even to walk to the far end of one of those we landed on, a distance of ten versts, where, we were told, there was higher and dryer ground covered with grass, it is possible that we might have added their eggs to our list; but the accounts we received, like many other items of information, were most conflicting, one person affirming from personal observation that the said islands are grass-covered, and another being equally positive that they are not. We cannot but believe, however, that their breeding-haunts were not far distant, whether upon the islands of the Golaievskai group unvisited by us, or upon the coast east or west of Dvoinik, or upon the coast of the Timanskai tundra, or upon all of these. In regard to the migration of the Sanderling in the south of Russia, the authors of the Russian work already referred to tell us that it has been seen in spring on the Spara, and in the autumn at Kasan.”

During passage it is found on the coasts of North Germany, but is much rarer on the Baltic than on the North Sea. It also occurs in Denmark, but somewhat sparingly, during the two seasons of passage. On the coasts of the North Sea it is more commonly met with; and Meyer says (*Brit. B. v. p. 164*) that “during the month of November its numbers in Holland are very great, although it does not remain there during the winter; on its return in the spring it remains on the Dutch coast to the end of May. The migration takes place by night, and principally along the sea-shores, or across the sea itself; and the locality it frequents during the daytime is flat, sandy, and shingly ground, in preference to muddy or boggy spots.” On the island of Borkum it has been observed by Baron von Droste Hülshoff as late as the middle of May. It is found on the shores of Belgium; and Messrs. Degland and Gerbe say that it occurs regularly on passage in the north of France, and usually appears near Dunkerque in August, September, and October, and again in April and May, in company with numbers of other Waders. In severe winters it is found on the shores of the Mediterranean, where M. Crespon records it as rare. Professor Barboza du Bocage includes it in his list of the birds of Portugal; and in Spain it is numerous in the autumn and part of the winter. Colonel Irby remarks that he saw the last during the first week in May; and Mr. Howard Saunders remarks that he never saw one in Spain in any thing approaching to summer plumage. According to Salvadori it is not very rare in Italy, has been met with tolerably often in Venetia, Liguria, Sicily, and Sardinia, and is said to be of irregular occurrence in Sicily, appearing in some seasons in large numbers. Mr. A. B. Brooke mentions that he found it by no means uncommon in Sardinia. In Greece,

according to Dr. Krüper, it is but seldom to be met with. Captain Sperling obtained one in winter dress at Missolonghi; and Lord Lilford records it from Corfu as very rare, and adds that a birdstuffer brought to him three specimens in the spring of 1858, which were the only ones he ever saw there. According to Dr. Anton Fritsch (*J. f. Orn.* 1871, p. 387), it has been twice killed in Bohemia—once near Frauenberg in 1869, and once near Bregau in November 1854; but it is very rare in Southern Germany, though it occurs here and there, and Messrs. Danford and Harvie-Brown state that solitary examples have been procured in various parts of Transylvania. It occurs also in Southern Russia, and doubtless also in Asia Minor, though I have no data respecting it from there; and Canon Tristram met with it in Palestine. In North-east Africa it appears to be a rather rare straggler. Von Heuglin says that it is of somewhat uncommon occurrence on the north coast of Egypt, but he met with it there in April and early in May in summer plumage. He never saw it on the Nile, where, according to Vierthaler, it has straggled as far as the Blue Nile. In the autumn and winter it is very common on the shores of the Red Sea, southwards to the Gulf of Aden; and examples obtained at Ras Belul in September were also in summer dress. It was most numerous in October and November on the Somali coast, not far from Berbera and Lasgori. It occurs on the coast of Algeria; Colonel Irby states that he saw large flights of Sanderlings, early in April, between Tetuan and Ceuta, and that Favier says:—"This bird is abundant during migration near Tangier in small flocks along the coast, crossing the Straits during March, April, and May; they are found returning south as late as December. I found numbers near Tetuan in February 1848, at the mouth of the river, where they are known to the Moors under the name of Medrouan." On the west coast of Africa it has been obtained at various places as far south as the Cape of Good Hope, as, for instance, Gambia, Bissao, Sierra Leone, the Gold Coast, Gaboon, and Benguela. Mr. Andersson states (*B. of Damara L.* p. 311) that it is very common on the coast of Damara Land, but is only sparingly met with inland; and Captain Shelley found it very plentiful at the Cape of Good Hope. Mr. Godman does not record it from Madeira or the Canaries; but Dr. Carl Bolle says that it is met with as a straggler in the latter islands; and Vernon Harcourt records it from Madeira. It is also found on the east coast of Africa. Mr. J. H. Gurney records it (*Ibis*, 1865, p. 272) from Natal; it has been met with in Mozambique; and Messrs. Roch and E. Newton killed two or three birds at Hivoondroo, in Madagascar, which, they say (*Ibis*, 1863, p. 169), they felt sure were Sanderlings. In Asia it is found as far east as Japan. It has been recorded from the Caspian Sea; Mr. Blanford states that, though very rare in India, it was the commonest Wader on the Makran coast; and Mr. A. O. Hume found it abundant at Kurrachee. According to Dr. Jerdon (*B. of India*, ii. p. 694), it is rare in India. He only obtained it on the coast at Nellore, where it was tolerably abundant. Captain J. Hayes Lloyd says (*Ibis*, 1873, p. 417) that he met with it in large flocks, consorting with the Pygmy Curlew, on the shores of the Gulf of Kuchh.

In Siberia it is not uncommon, passing far north to breed. Von Middendorff says that the Sanderling arrived on the Taimyr, in 74° N. lat., on the 4th June, and was met with up to 75°, being more numerous the further north it was observed, but always in small parties of five or six individuals. On the Boganida one was shot on the 8th, and another on the 10th of June. Messrs. Dybowski and Parvex observed it during passage in Dauria; and, according to the

former gentleman, it is common, visiting Kultuk about the middle of August, and remaining till the middle of September.

Mr. Swinhoe records it as a winter visitant to China, where he met with it at Amoy and Hainan; it has also been obtained at Hakodadi, in Japan; and, according to Professor Schlegel, there are examples in the Leiden Museum from Java; but it does not appear to have occurred as far south as Australia or New Zealand, as is the case with the Knot.

In the Nearctic Region the present species has a tolerably wide range; and I am indebted to Dr. Elliott Coues for the following notes respecting its range on that continent:—"The Sanderling is a very abundant bird during migration along the south coast of North America. In the interior of the United States I am not personally informed of its occurrence, though I should not be surprised if, like most other littoral species, it were to be found on the great lakes or other large inland waters. It is enumerated by Dr. J. M. Wheaton among the birds of Ohio, but marked as one of the stragglers; and certainly few species, if any, are more decidedly characteristic of the sea-coast. Along the shores of the Atlantic I have traced it from New England to the Carolinas; and I found it wintering on the coast of California. But it pushes much further south than this. Cabanis records it from Cuba (*J. f. O.* iv. p. 422), Cassin from Carthagenia (*P. Phil. Acad.* 1860, p. 195), Laurence from Yucatan (*Ann. Lyc. N. Y.* ix. p. 120), Selater & Salvin from Peru (*P. Z. S.* 1868, p. 176), Pelzeln from Brazil (*Orn. Bras.* p. 312), and Philippi from Chili (*Cat.* p. 36). The southerly quotations appear to all refer to the winter resorts of the species, which are thus seen to be very extensive—the more so when we consider that at the same season the birds are also found on the beaches at least as far north as New Hampshire, and probably further. In North Carolina, where my observations on this species were more protracted than elsewhere, I found it present in abundance the whole year, excepting the three summer months. The greater number pass north early in May; but some linger until June; the later birds come into nearly perfect breeding-dress before they leave. All through May the birds are scarcely to be observed in the large dense flocks in which they go in winter, having already broken up this association and entered upon their preliminary courtships. A few return from the north late in August, but the majority not until October. In Labrador I did not find the bird at all, as it does not breed there, and as my departure (early in September) was before the migration had become fairly established—though I am satisfied that, during the last few days of my stay in the country, birds might have been observed. We have advices of its occurrence the entire length of our Pacific coast, from Cape St. Lucas to Alaska, among the Aleutians, and at the Prybilov Islands. Of its breeding-resorts I have nothing particularly to the point to offer, being only informed, in a general way, that it proceeds to the very farthest north to breed. It was one of the few species found breeding by the 'Polaris' expedition, specimens in down having been procured by Dr. Bessels, naturalist of that exploration." To this I may add that Dr. Gundlach records it from Cuba, where he obtained it in September; and it is occasionally met with between September and November on the Bermudas.

Like the Knot and Grey Plover, the Sanderling is only a visitant to our shores, at all seasons except during the breeding-time; for it never remains with us to rear its young. Sometimes a few individuals remain on our coasts until late in the spring, when they have donned the full summer dress; and I possess examples in all stages of plumage from the winter to the summer

garb, all obtained in Great Britain; but, as a rule, summer-plumaged specimens are rare with us. The Sanderling frequents the coast only, never being met with inland, unless driven there by stress of weather. It affects the large sandy tracts which are alternately covered by the water and left bare again as the tide rises and falls, or else muddy estuaries or mud-flats left bare by the receding water; and it not unfrequently consorts with other species of marine Waders, such as Dunlins, Ringed Plovers, &c. As a rule, the present species is rather tame and confiding than shy, and may be approached without much difficulty, especially when feeding. Its food consists of small worms, insects, &c.; and Mr. Stevenson states that the stomachs of several he examined were filled with "the remains of small shrimps and sandhoppers, small white worms, little fragments of seaweed, and minute beetles, mixed with a considerable amount of coarse sand." When feeding they scatter over the sands or mud-flats, probing the soft sand or mud with their bills, now and then raising their wings over their backs as if stretching them, but without attempting to take wing, sometimes running rapidly, following the receding wave, and quickly evading it as it returns. If winged and happening to fall into the water, the Sanderling will swim buoyantly and with ease; but I have not known it to dive when pursued. When a flock is alarmed they take wing in a body and fly out to sea, uttering a shrill but not unpleasant cry, and, circling and wheeling like a flock of Dunlins, they will alight again near the edge of the water at some distance from where they took wing.

Until lately nothing was positively known as to the nidification of this species, though it was said to breed in considerable numbers on the Parry Islands; for the meagre account of Hutchins, first published by Richardson (Faun. B.-Am. ii. p. 366), was, and still appears, very questionable. It was supposed to have been found breeding more than once in Iceland or the adjacent islet of Grimsey; but the eggs sent thence were obviously those of the Ring-Plover (*Ægialitis hiaticula*)—a bird, from its local name (*Sandlóa*), often confounded there with the Sanderling. In 1858 Mr. Wolley and Professor Newton bought at Reykjavik a small collection of eggs which had certainly been formed in that island. Among them was one which the latter gentleman has told me he at the time felt pretty confident would prove to be a Sanderling's. Some ten years later Mr. Macfarlane, one of the collectors of the Smithsonian Institution, found this species breeding on the barren grounds of Anderson river, in Western North America, and obtained a nest with four eggs, from which the hen bird was shot. One of these, having been transmitted by Professor Baird to Professor Newton, was by him exhibited to the Zoological Society, and figured (P. Z. S. 1871, p. 56, pl. iv. fig. 2). The specimen appeared to be so different from that which he had formerly got in Iceland, that he for the time gave up his belief in the latter belonging to this species; but on the return of the German North-Pole expedition the eggs collected by Dr. Pansch, who was attached to it as naturalist, were placed in Professor Newton's hands by Dr. Finsch for description. Among them was a series of ten specimens, taken on Sabine Island, off the east coast of Greenland, when no other species of Wader to which they could possibly have belonged, except *Calidris arenaria* (which was plentiful), was observed. This series, as Professor Newton afterwards stated (P. Z. S. 1871, p. 546, and *Zweite deutsche Nordpolarfahrt*, ii. p. 240), exhibited all the necessary links of transition between his supposed specimen from Iceland and the authenticated specimen from Anderson river, which respectively show the limits of variation in the eggs of this species so far as we are yet acquainted with them.

Mr. Macfarlane says that the nest he took was made of "hay and decayed leaves." As above stated, Dr. Bessels obtained the young in down on the U.S. Arctic expedition; and Captain Feilden has also brought back the eggs and the young of the Sanderling, obtained by him on the expedition made by the 'Alert' and 'Discovery,' and informs me that he found the nest, containing two eggs, on the 24th June 1876, in lat.  $82^{\circ} 33'$  N., and the male bird was sitting on them. The nest was placed on a gravel ridge, bare of snow, at an elevation of about 1000 feet, and was a slight depression in the centre of a recumbent plant of *Salix arctica*. These eggs, which I have seen, may best be described by comparing them to miniature Curlew's eggs of a pale colour. In size they are about equal to those of the Wood-Sandpiper.

The specimens figured are, on the one Plate, the adult in winter plumage in the background, and in summer dress in the foreground, and, on the second Plate, the young in half down and the immature bird in its first autumn dress; and they are those above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Norfolk coast. *b*, ♂, *c*, ♀. Pagham, Sussex, May 15th, 1872 (*A. Grant*). *d*. Hants, April 1872 (*Baron A. von Hügel*). *e*, *juv.* Sussex, July 1870 (*R. B. Sharpe*). *f*. Fyen, Denmark (*A. Benzon*). *g*, ♂. Gwader, Baluchistan, January 22nd, 1872 (*W. T. Blanford*). *h*, *juv.* Bay of Fundy, 1864 (*G. Thomas*). *i*, *k*, *l*. New-Jersey coast (*J. Krider*). *m*. Fort Macon, N. Carolina, September 1864 (*A. C. Beales*). *n*. Sambo, October 28th, 1867 (*H. Whitely*).

*E Mus. H. Seebohm.*

*a*, ♂. Golaievskai Isles, Petchora, North Russia, July 14th, 1875 (*H. S.*).

## Genus TRYNGITES.

*Tringa* apud Vieillot, Nouv. Dict. xxxiv. p. 465 (1819).

*Actitis* apud Schlegel, Rev. Crit. p. 92 (1844).

*Tryngoides* apud J. E. Gray, Cat. Brit. B. p. 178 (1850).

*Limicola* apud Lichtenstein, Nomencl. Av. p. 92 (1854).

*Actidurus* apud Heermann, Proc. Phil. Acad. vii. p. 179 (1854).

*Tryngites*, Cabanis, Journ. für Orn. 1856, p. 418.

THIS genus is essentially a New-World one, being only represented in the Palæarctic Region by rare stragglers. These birds are usually found in grassy places, both in dry and damp localities, as well as on the sandy plains of the Southern States, where I have frequently met with them. They resemble Bartram's Sandpiper in their habits more than any of the other Sandpipers, and, like that species, are usually found in grassy or sandy inland places, and not on the sea-coast. They are habitually tame and confiding, very quick and active on foot, tripping along very rapidly; and on the wing they resemble Ring-Plovers more than any of the other Waders. Their call-note is low and weak, and is uttered both when the bird is tripping along and when it rises on the wing. They feed on small insects and worms, which they usually obtain amongst the grass. They nest, like their allies, on the ground, placing their four eggs in a depression in the soil, scantily lined with grass-bents or leaves. The eggs are pale ochreous or olivaceous grey, marbled and blotched with different shades of brown and neutral tint.

*Tryngites rufescens*, the type of the genus, has the bill about as long as the head, slender, straight, the nasal groove extending nearly to the tip, which is decurved and obtuse; nostrils basal, linear, rather large; wings long, pointed, the first quill longest, the inner webs of the quills peculiarly marbled; tail moderately long, doubly emarginate; legs moderately long, slender, the tibia bare for a considerable distance; tarsus compressed, slender, scutellate; toes slender, the hind toe small, elevated, the anterior toes scutellate, marginate; claws small, arched, slender, slightly acute.







1874 Leconte's 12th

M & N H. what 1874

BUFFBREASTED SANDPIPER.  
TRYNGITES RUFESCENS.

## TRYNGITES RUFESCENS.

(BUFF-BREASTED SANDPIPER.)

*Chorlito garganta blanca acanelado*, Azara, Apunt. Hist. Nat. Pax. Paraguay, iii. p. 320. no. 403 (1805).

*Tringa subruficollis*, Vieill. Nouv. Dict. xxxiv. p. 465 (1819, ex Azara).

*Tringa rufescens*, Vieill. tom. cit. p. 470 (1819).

*Actitis rufescens* (Vieill.), Schlegel, Rev. Crit. p. 92 (1844).

*Actiturus rufescens* (Vieill.), Bp. Rev. Crit. p. 186 (1850).

*Tringoides rufescens* (Vieill.), J. E. Gray, Cat. Brit. Birds, p. 178 (1850).

? *Limicola brevirostris*, Licht. Nomencl. Av. p. 92 (1854).

\* *Actidurus nævius*, Heermann, Proc. Phil. Acad. vii. p. 179 (1854).

*Tryngites rufescens* (Vieill.), Cabanis, Journ. für Orn. 1856, p. 418.

"*Tringa squalida*, Natt. Catal. msc. antea," fide Pelz. Orn. Brazil, p. 310 (1871).

*Figuræ notabiles.*

Vieill. Gal. des Ois. p. 238; Gould, B. of Eur. pl. 326; id. B. of G. B. iv. pl. 64; Audubon, B. Am. pl. 331; Heermann, Pac. R. Road Report, x. pt. vi. pl. 6.

*Ad. supra* ochrascenti-cervinus, plumis centraliter nigris, dorsi plumis albido apicatis: secundariis intimis elongatis nigro-fuscis, vix metallico adumbratis et ochraceo marginatis: remigibus extus nigro-fuscis, versus apicem saturatioribus, scapis albis, in pogonio interno albis et griseo-albidis nigro marmoratis, apicibus vix albido marginatis: caudâ fuscâ, vix metallico tinctâ, albicante cervino apicatâ et fasciâ subapicali nigrâ notatâ, rectricibus extimis nigro marmoratis: corpore subtus ochraceo, abdomine pallidiore, plumis in pectore albido apicatis, nonnullis in lateribus centraliter nigro notatis: rostro virescenti-nigro: iride fuscâ: pedibus ochraceo-flavidis.

*Juv.* adulto similis sed dorsi et uropygii plumis saturatioribus, nigro-fuscis, albido angustè marginatis, scapularibus et secundariis elongatis albido marginatis et magis metallico tinctis: corpore subtus pallidiore.

*Adult Male* (Matamoras, Mexico, August). Upper parts clay-buff, the centres of the feathers black, those on the back tipped with dirty white; elongated inner secondaries blackish brown with a metallic tinge, edged with ochreous: primaries and short secondaries externally blackish brown, darker towards the tip, the shafts white, the inner webs greyish black near the shaft, otherwise white, marbled with black, the tip narrowly edged with white; tail brown with a greyish metallic tinge, tipped with buffy white and a subterminal blackish band, the outer rectrices slightly marbled with blackish; underparts clay-yellow, rather paler on the abdomen and under tail-coverts, the feathers on the breast with yellowish white tips, some on each side of the breast with black central blotches; lesser under wing-coverts yellowish white, larger ones with a broad subterminal black band, tipped with white, the basal portion marbled with black; bill greenish black; iris hazel-brown; legs clay-yellow. Total length about 7 inches, culmen 0.9, wing 5.15, tail 2.25, tarsus 1.25.

*Adult Female* (Matamoras). Resembles the male, but is, perhaps, a trifle smaller.

*Young of the year* (Laredo). Resembles the adult, but has the back and rump darker, these parts being blackish brown with narrow brownish white margins to the feathers, the scapulars and elongated inner secondaries having also dull white margins, the latter having also a metallic purplish tinge; and the underparts are paler and whiter.

*Obs.* I cannot observe any difference in plumage according to the season of the year, except that the specimens from Peru, obtained in the late autumn, have the plumage worn and the underparts paler.

THIS beautiful Sandpiper, which inhabits the northern portions of the Nearctic Region during the breeding-season, migrating in winter far down into South America, is only met with as a rare straggler in the Palæarctic Region, most of the recorded occurrences having taken place in Great Britain. It is somewhat singular that, though described by Vieillot in 1819, it was unnoticed by the North-American ornithologists until Yarrell recorded it as a British bird, and called Audubon's attention to it. Yarrell (*Brit. B.* iii. p. 61) records the following instances of its occurrence in Great Britain, viz.:—one shot in September 1846, in the parish of Melbourne, Cambridgeshire; one killed at Sherringham, Norfolk, on the 29th July, 1832; one, a male, obtained in May 1829, at Formby-on-the-Alt, about thirteen miles north of Liverpool; one, Yarmouth, autumn of 1839 or 1840; one, Yarmouth, 22nd September, 1841; and another at the same place in September 1843; one, Marazion, Cornwall, 3rd September, 1846 (*Rodd, Zool.* 1846, p. 1500); and one recorded by Mr. F. M'Coy as having been shot by Mr. J. Hill near the Pigeon-house, Dublin. Besides these, the following instances are also on record, viz.:—one, Sussex coast, 1843 (*Bond, Zool.* 1843, p. 148); one on the Exe, August 1851 (*D'Urban, Guide to Exeter*, p. 122); one, Lundy Island, 1858, in the possession of Dr. Woodforde, of Taunton (*Harting, Handb. Brit. B.* p. 138); one, Land's End, 8th September, 1860 (*Rodd, Zool.* 1860, p. 7236); two, People's Park, Belfast, October 1864 (*Saunders, Zool.* 1866, p. 389); one, co. Dublin (*Blake-Knox, Zool.* 1866, p. 303); and one, Scilly, September 1870 (*Rodd, Zool.* 1870, p. 2346). Mr. Harting, who enumerates (*l. c.*) all the above occurrences, adds that he was informed by Mr. J. H. Gurney, jun., that a specimen recorded in the '*Zoologist*,' 1857, p. 5791, as referable to the present species, was in all probability a young Ruff. It appears also to have occurred in Scotland; for Mr. Robert Gray writes (*B. of W. of Scotl.* p. 319) as follows:—"A specimen of this rare British bird is mentioned in a catalogue of species found in Caithness, by the late Mr. Sinclair, of Wick, and published in the statistical account of that parish in 1835. This specimen is still preserved in the collection which belonged to Mr. Sinclair, and has of late years been referred to by Mr. Shearer in a paper which was published in the '*Proceedings*' of the Royal Physical Society of Edinburgh."

On the continent of Europe it is extremely rare. Messrs. Degland and Gerbe (*Orn. Eur.* ii. p. 210) that a young male bird of the year was obtained near Abbeville, and is in the collection of M. J. de Lamotte; and, according to Professor Blasius, there is a specimen in the collection of Mr. Gätke, obtained on Heligoland.

In America it is generally distributed throughout the United States during the seasons of passage, but breeds only in the high north. Mr. Dall (*Trans. Chic. Ac. Sc.* 1869, p. 293) says that "two specimens were obtained on the Yukon, below Nulato, where it is rare; one was obtained at Sitka by Bischoff. It breeds abundantly in the Anderson-river region." Nuttall

says (Orn. U. S. ii. p. 113), "in some seasons not uncommon in the market of Boston in the months of August and September, being met with near the capes of Massachusetts Bay. My friend Mr. Cooper has also obtained specimens from the vicinity of New York." Dr. Coues states that in the United States it is nowhere very abundant, and this is particularly the case along the Atlantic coast. In Texas, however, I found it rather numerous than otherwise during passage in the autumn, and shot many specimens both in Mexico and Texas. It was also obtained in Bermuda by Canon Tristram, and in Cuba by Dr. Gundlach. In South America it has been met with as far south as the Plata, where it was obtained by Dr. Darwin on the voyage of the 'Beagle.' Mr. Salvin has lent me a specimen from Bogota; and Von Pelzeln states (*l. c.*) that Natterer obtained it in Brazil, at Ypanema, Lagoa do Portao, at some little distance from the water's edge, in November, in Matogrosso in October, at Borba in April, and at Marabitanas in March. Messrs. Salvin and Godman have specimens from Eastern Peru; and, as above stated, Darwin met with it in Monte Video.

My first acquaintance with this beautiful and rare Wader was made at Matamoras, in Mexico. I used to visit a small lagoon near the town almost every morning in order to pick up any good birds that might be there, and on the 21st August, 1863, when, as usual, I went to the lagoon, I saw a small flock of birds which were quite unknown to me on a little patch of grass near the lagoon, but not in a damp place; and on shooting four specimens (which I succeeded in doing without much trouble, for they were very tame and unsuspicious), I was delighted to find that they were Buff-breasted Sandpipers. I had my field-glass with me; and as I soon succeeded in approaching within a tolerably short distance of them, I had an excellent opportunity of observing them. Some days later I travelled with a friend from Matamoras to San Antonio de Bexar, in Texas, by short stages, as we drove the same horses right through, and we halted several times during the day both to rest the horses and to forage after food; for we trusted to my gun to supply the larder; and, I am glad to add, we were seldom on short rations. During the first three or four days, whilst passing through the sandy arid country, we met with considerable numbers of Buff-breasts; and for three days, at least, we lived chiefly on these dainty birds—which were as fat as they could be, and, split up and fried in their own fat in the pan over the camp-fire, made a most delicious morsel. We generally met with them in small flocks of from five or six to a dozen individuals, never near or on the edge of water, though in some places there were small ponds which swarmed with Waders; but they frequented the grassy places, if any such were to be found, or were seen running along in an irregular wavy line on the road or track made by the cotton-teams. They were unsuspicious and unwary, and could be shot with ease. When fired at, the survivors would fly off to some distance and then alight and run about in search of insects as if nothing had happened. On the wing they somewhat resembled a Ring-Plover, and not so much Bartram's Sandpiper, to which this species is otherwise so closely allied in its general habits and in the nature of the ground it frequents, except that it is more frequently seen on dry almost grassless soil, whereas I have never met with Bartram's Sandpiper except on the grassy plains. Its call-note is low and weak, and is repeated several times in succession, either as it trips along or else as it rises to fly away. Dr. Heermann states that he has found it frequenting the freshwater ponds and streams, which I have never done. He writes in the 'Report of the Railway Survey,' on which he held the appointment of

naturalist, as follows:—"While riding on the prairies near San Antonio my attention was called to this bird from its being smaller than Bartram's Tatler, which there abounds. It ran nimbly on the ground among the grass in search of insects, uttering, when disturbed, a weak tweet, two or three times repeated. The birds of this genus, unlike the *Tringæ* (which congregate in large flocks, showing a preference for the sea-shore), migrate in small parties, resorting to the freshwater ponds and streams of the interior, or seek their food on the broad grassy plains. They run with great celerity. If alarmed they fly with rapidity, making wide circuitous sweeps before alighting. When wounded they take to the water, swimming with facility, and often diving to escape danger. The nest, formed of grasses, and containing four eggs, is placed on the ground, which has been previously hollowed out. When disturbed during the breeding-season, the female, flying a short distance from her nest, throws herself on the ground, fluttering along as if wounded, and thus decoys the intruder into following her away. Once at a safe distance she takes to wing, returning to her home by a circuitous route." I have given the above notes *in extenso*, but may remark that there is some mistake in the portion relative to the nidification of the present species, which does not breed in Texas, or, indeed, so far as I can ascertain, in any part of the United States. During the time I spent at San Antonio in 1863 and 1864, in company with Dr. Heermann, we never saw the Buff-breasted Sandpiper there; and he told me that he had not observed it for several seasons.

Dr. Elliott Coues sends me the following notes respecting the present species:—"This remarkable Sandpiper I have never seen alive to my knowledge; and what little original information I have to offer you relates mainly to its breeding-range (as determined by the data in the Smithsonian Institution) and to its eggs, of which almost nothing has until lately been learned. The general habits of the bird, as described, together with the nature of its resorts, and its food, appear to be much the same as those of the Bartraman Tatler, which is, upon the whole, its next nearest ally after *T. parvirostris*, Peale. In the United States, where it appears to be nowhere abundant, though it is generally diffused, it is known only as a migrant. Great numbers nest in the Anderson-river region and along the arctic coast, as attested by the series of eggs collected by Macfarlane. I have examined altogether about a dozen sets in the Smithsonian collection. They are very pointedly pyriform, with broadly obtuse great ends. In size they vary as follows, viz.  $1.50 \times 1.03$ ,  $1.48 \times 1.10$ ,  $1.45 \times 1.02$ ,  $1.40 \times 1.04$ . The ground is clay-coloured, sometimes with a slight ochraceous shade, oftener with a peculiar clear greyish cast. The markings are extremely bold and sharp, though not heavier than usual. Taking a distinctly marked sample, we observe heavy blotches and spots of indeterminate shape and size all over the egg, but largest and closest on the major half; these markings are rich umber-brown, of varying intensity according to the quantity of the pigment. Next to these heavily blotched varieties come the splashed ones, in which the markings mass about the great end, only small spots being elsewhere spattered; this is a frequent pattern, which in some cases entirely hides the ground-colour at the larger end. Other examples are spotted (almost *streaked*) with rather narrow markings, that seem to radiate from the large end, becoming largest and thickest about the middle of the egg. All eggs have the usual neutral-tint or stone-grey shell-markings; and in most specimens there are at the large end a few scrawls of blackish, as if laid over all the other markings. The labels state no

peculiarity of nidification; the nest, only a slight depression of the ground, lined with a little grass or a few leaves. Most of the sets consist of four eggs."

I am indebted to Professor Baird for two eggs of the present species from the Anderson river, which agree with the varieties last described by Dr. Coues.

The nearest ally of the present species appears certainly to be that described by Peale under the name of *Tringa parvirostris*.

Respecting this species Dr. E. Coues writes to me as follows:—"This bird Gray refers to *T. cancellata* of Gmelin; Schlegel considers it as possibly the same as *T. rufescens*. While it may be the same as *T. cancellata*, it is altogether specifically distinct from *T. rufescens*, perhaps separable subgenerically. I determine this upon examination of Peale's types now in the Smithsonian. With a certain general resemblance to *T. rufescens* it lacks the peculiar mottling of the primaries, which is such a strong feature in *T. rufescens*, has a transversely barred tail, different proportions of wings and tail, and a differently shaped bill, which lacks the prolongation of the feathers of the under mandible, and is shorter and more slender."

The specimen figured is an adult bird in my own collection, shot by myself at Matamoras, in Mexico.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a, b, ♂, c, ♀.* Matamoras, Mexico, August 21st, 1863 (*H. E. D.*). *d, juv.* Laredo, Rio Grande del Norte (*Dr. H. B. Butcher*).

*E Mus. Salvin and Godman.*

*a.* Great Slave Lake, Arctic America, June 1st, 1863 (*L. Clarke*). *b, ♂.* Matamoras, Mexico, August 21st, 1863 (*H. E. Dresser*). *c.* Xeberos, E. Peru, October 1866 (*E. Bartlett*). *d, ♂.* Pebas, E. Peru, August 3rd, 1866 (*J. Hauxwell*). *e.* Bogota.

*E Mus. H. B. Tristram.*

*a, juv.* Bermuda, November 1848 (*H. B. T.*). *b.* Amazon river (*Bartlett*).



## Genus ACTITURUS.

*Tringa* apud Bechstein in Lath. Allg. Uebers. iv. pt. 2, p. 453 (1812).

*Totanus* apud Vieillot, Nouv. Dict. vi. p. 401 (1816).

*Bartramia* apud Lesson, Traité d'Orn. p. 553 (1831).

*Actidurus*, Bonaparte, Sagg. Distrib. Metod., Agg. e Correz. p. 143 (1832).

*Euliga* apud Nuttall, Man. Orn. U. S. ii. p. 167 (1834).

*Actitis* apud J. F. Naumann, Naturg. Vög. Deutschl. viii. p. 43 (1836).

*Actiturus*, Keyserling & Blasius, Wirbelth. Eur. p. 73 (1840, ex Bp.).

*Tringoides* apud G. R. Gray, Gen. of B. iii. p. 574 (1846).

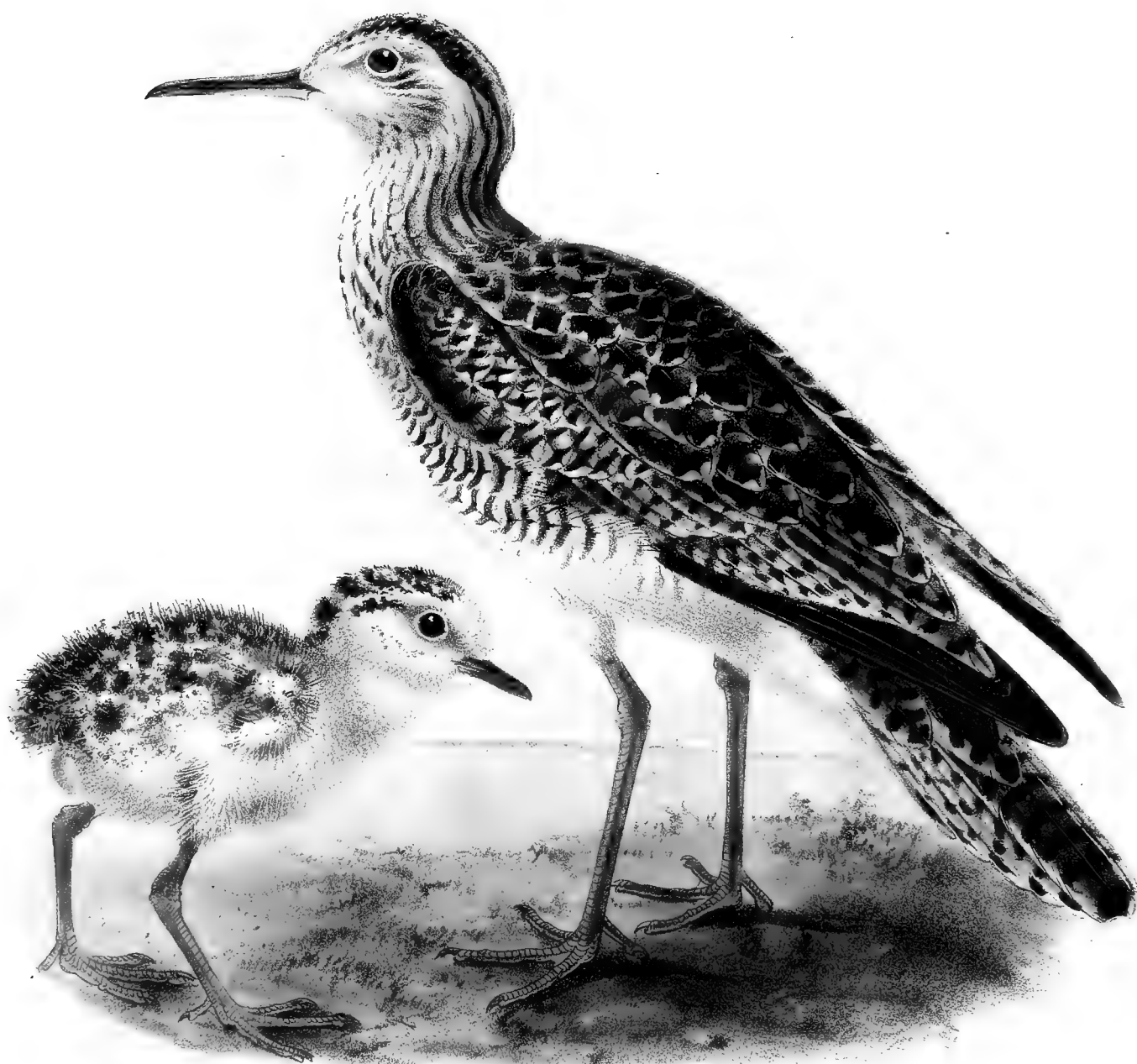
BUT a single species belongs to the genus *Actiturus*, which is essentially an American one. The birds of this species, *A. longicaudus*, inhabit the Nearctic and Neotropical Regions, rarely straggling to the Western Palæarctic Region; and some have even been recorded from the Australian Region. They are essentially upland birds, frequenting grassy prairies, not being met with on the sea-coast. They run about amongst the grass with ease and swiftness, and at the approach of danger squat for a time until the intruder comes near, and then take wing, flying tolerably swiftly, though their flight is direct, and they are not difficult to shoot. Their note is a mellow whistle, usually uttered when the bird is on the wing. They are companionable, though seldom found in flocks, but scattered singly about the prairies. They feed on insects of various kinds, chiefly grasshoppers and coleoptera, and are said sometimes to eat berries. They nest on the ground, placing their four eggs in a small depression scantily lined with a few grass-bents or leaves. The eggs are pale drab, spotted and blotched with purplish grey and pale greyish purple.

In the article on this species I used the generic title *Actiturus*; but I have since ascertained that *Bartramia* should be used. This bird should therefore stand as *Bartramia longicauda*.

*Bartramia longicauda* has the bill nearly as long as the head, moderately slender, straight, the nasal groove extending nearly to the tip of the bill, which is narrowed but obtuse; nostrils linear, basal, moderately large; wings long, pointed, the first quill longest, the inner secondaries rather elongated; tail rather long, rounded; legs long, rather slender, the tibia bare for a considerable distance; tarsus scutellate, long, slender; hind toe moderately large, anterior toes long, slender, scutellate above, and marginate; claws small, compressed, curved, obtuse, that on the middle toe slightly dilated on the inner edge.







Leutemans lith

M & N Hanhart imp

BARTRAM'S SANDPIPER.  
*ACTITURUS LONGICAUDUS*

## ACTITURUS LONGICAUDUS.

(BARTRAM'S SANDPIPER.)

- Tringa longicauda*, Bechst. Lath. Allg. Uebers. der Vög. Band iv. Theil 2, p. 453 (1812).  
*Tringa bartramia*, Wils. Am. Orn. vii. p. 63, pl. 59. fig. 2 (1813).  
*Totanus melanopygius*, Vieill. Nouv. Dict. vi. p. 401 (1816).  
*Totanus variegatus*, Vieill. Nouv. Dict. vi. p. 397 (1816).  
*Totanus bartramia* (Wils.), Temm. Man. d'Orn. ii. p. 650 (1820).  
*Bartramia laticauda*, Less. Traité d'Orn. p. 553 (1831).  
*Actidurus*, Bp. (*Tringa bartramia*, Wils.), Sagg. Distrib. metod. Anim. Vertebr. Agg. e Correz. p. 143 (1832).  
*Euliga*, Nutt. (*Tringa bartramia*, Wils.), Man. Orn. U. S. & Canada, ii. p. 167 (1834).  
*Actitis bartrami* (Wils.), J. F. Naumann, Naturg. Vög. Deutschl. viii. p. 43 (1836).  
*Actiturus bartrami* (Wils.), Keys. & Blas. Wirbelth. Eur. p. 73 (1840).  
*Actiturus bartramius* (Wils.), Bp. Comp. List, p. 51 (1838).  
*Tringoides bartramius* (Wils.), G. R. Gray, Gen. of B. iii. p. 574 (1846).  
*Bartramius longicaudus* (Bechst.), Rev. et Mag. de Zool. 2nd ser. ix. p. 59 (1857).  
*Actidurus longicaudus* (Bechst.), Blas. Verz. Vög. Eur. p. 12 (1861).  
*Actiturus longicaudus* (Bechst.), Blas. List B. of Eur. p. 18 (1862).

*Figuræ notabiles.*

Werner, Atlas, *Gralles*, pl. 20; Naumann, Vög. Deutschl. taf. 196; Gould, B. of Eur. pl. 313; id. B. of G. Brit. iv. pl. 63; Audub. B. of Am. pl. 327; Wilson, Am. Orn. pl. 59. fig. 2.

*Ad. ptil. æst.* pileo nigro-fusco rufescenti-cervino notato, fronte albidâ fusco striatâ: dorso et uropygio nigricantibus, hâc rufescenti-cervino notato: tectricibus alarum, remigibus secundariis et scapularibus griseo-cervinis nigro-fusco fasciatis: remigibus primariis in pogonio externo et in parte apicali nigricantibus, in pogonio interno albis nigro fasciatis: rectricibus centralibus cervino-fuscis, nigro fasciatis, reliquis rufescentibus nigro fasciatis et albo terminatis, cum fasciâ magnâ subapicali notatis: mento et capitis lateribus albis: corpore subtùs albo vix cervino tincto: gulâ nigro striatâ, et pectore conspicuè fasciis nigris notato: hypochondriis, subalaribus et axillaribus nigro fasciatis: rostro ad basin flavo, nigro terminato: iride fuscâ: pedibus ochraceo-flavidis.

*Ad. ptil. hiem.* similis, sed corpore suprâ vix pallidiore et magis rufo-cervino notato: gutture et pectore minus notatis nec fasciatis, sed nigro-fusco striatis.

*Adult Female* (Wisconsin, 5th June). Forehead buffy white marked with blackish brown; crown blackish brown marked with rufous buff and with an irregular central buff stripe; hind neck brownish buff, striped with black; back and rump glossy blackish brown, the feathers on the former slightly margined with rufous buff; upper surface of the wings warm greyish buff, varied in tone of colour and barred

with blackish brown; primary quills blackish brown on the outer web and terminal portion, otherwise white barred with blackish; tail long and graduated, central rectrices dark buffy brown barred with black, the remaining feathers pale rufescent, irregularly barred with black, and broadly tipped with white, with a large subterminal black bar; upper tail-coverts like the rump; chin and sides of the head before the eye white; neck and breast buffy white, the former striped, and the feathers on the latter margined with black; rest of the underparts white, the flanks, under wing-coverts, and axillaries barred with black; bill yellowish at the base, otherwise blackish; iris dark brown; legs clay-yellow. Total length about 11·5 inches, culmen 1·4, wing 6·65, tail 3·6, tarsus 1·95.

*Adult Male.* Does not differ from the female in plumage, but is, on an average, rather less in size.

*Adult in winter* (Mexico). Differs from the specimen above described only in having the upper parts rather paler, the feathers on the back more broadly margined with rufous buff, and the markings on the lower throat and breast mere small stripes or arrow-shaped marks, and not broad margins to the feathers.

*Young in down* (Iowa). Upper parts richly mottled black, white, and warm buff; crown brightly mottled, surrounded with a black line, and on the nape marked with another black line interrupted by a broad buffy white line; sides of the head, forehead, and underparts white.

THE present species, which inhabits the Nearctic Region, straggling down into the Neotropical Region during winter, has, curiously enough, not only been met with on several occasions in Europe, but has even been once recorded from Australia.

The first record of its occurrence in England is that by the late Hugh Reid, of Doncaster, who in 'The Zoologist' for 1852 (p. 3330) described a Sandpiper, unknown to him, which had been shot near Warwick in October 1851. Mr. A. G. More and Mr. Gurney immediately suggested (p. 3388) that the bird so described was a Bartram's Sandpiper; and this it proved to be (p. 4254). The specimen passed from the collection of R. T. Barnard, Esq., of Kinton Hall near Warwick, into that of Lord Willoughby de Broke, at Compton Verney, near Stratford-on-Avon. The occurrence of a second specimen was made known by the Rev. F. Tearle, of Trinity Hall, Cambridge, in the 'Illustrated London News' of 20th February 1855, and was subsequently sent to Yarrell, who says (Brit. B. ii. p. 433) that one "was shot on the 12th of December 1854, about three o'clock in the afternoon, in a ploughed field between Cambridge and Newmarket. Some farm-labourers, who were engaged in thrashing near the spot, observed a strange bird flying round in large circles over the adjoining field, and uttering a whistling cry at short intervals. It frequently alighted, and ran along the ground like a Corncrake. One of the men thought he could catch it with his hat, and gave chase; but the bird, as soon as he came near, rose and flew around, whistling as before. On seeing that it did not fly away the son of the gamekeeper, who lived close by, went into his father's house for a gun, and came out and shot it. He sent it to me a few days afterwards, calling it a Whistling Plover." This specimen is now in the collection of Mr. Gurney, at Northrepps. A third instance of its occurrence in England is recorded in the 'Times' of the 14th November 1865, by Dr. W. K. Bullmore, who states that one was obtained near Falmouth; and Mr. Harting (Handb. Brit. B. p. 137) includes the specimen recorded by Mr. Morris as having been obtained at Bigsweat, Gloucestershire, on the 19th January, 1855. Naumann (Vög. Deutschl. viii. p. 51) records the occurrence of a single specimen obtained on the Werra, in Hessen, but he does not give the date when it was

shot; and according to Meyer (Taschenb. deutsch. Vogelk. iii. p. 156), one was shot on the Dutch coast. Besides these six recorded instances of its occurrence, a seventh is recorded by Mr. C. A. Wright, who states (Ibis, 1869, p. 247) that one was captured in Malta on the 17th November 1865; and an eighth was, Count Salvadori says, killed in Liguria in October 1859, and is now in the collection of Sig. De Negri, in Genoa. According to Mr. Gould (Handb. B. Austr. ii. p. 242) it has occurred once in Australia; for a specimen was sent to him for examination, which was shot by an old sportsman during the Snipe-season of 1848 near the water-reservoir in the vicinity of Sydney.

I give below a series of notes on the range of the present species in America, and on its habits, sent to me by Dr. Elliott Coues, and may remark that the only place where I have had an opportunity of seeing this bird alive was in Texas. When travelling from Matamoras to San Antonio de Bexar we had to toil several days through an arid sandy country where almost the only Waders we saw were Curlews and Buff-breasted Sandpipers, both of which were numerous in many parts; but as soon as we reached the rich grass-prairies we found the present species everywhere, and I shot numbers of them daily for the pot. They were not in flocks, but scattered singly all over the grass-plains. I found them shy and difficult of approach if I tried to stalk them on foot; but by riding or driving towards them I could generally get within range, and shot most of those I killed from the saddle, pulling up and firing as they rose from the ground. They were exceedingly fat, and several burst on falling on the ground; but the fat is very sweet, and I rarely tasted so good a bird. We used to split them up, making a spatchcock of them, and fry them in their own fat in the frying-pan; and I can well imagine that when prepared by a good cook they must make a most delicious morsel. I was told that, in New Orleans and other large towns in the south, the Grass-Plover is held in high esteem by epicures, and is supposed to renovate the wasted vigour of ancient *roués*; but if this were the case, I am afraid that the demand for it in other parts of the world would make it an article of export and soon cause its extermination.

When undisturbed this bird runs about among the grass with great swiftness, picking up insects here and there; and when frightened it will suddenly squat down, reminding one much of the Stone-Curlew. When flying off, it utters a melodious whistle of three notes, from which its local name of "Papabot" is derived.

I am indebted to my friend Dr. E. Coues for the following notes:—"Bartram's Tattler, better known to sportsmen as the 'Upland Plover' or 'Field-Plover,' is a far-ranging bird in America, inhabiting, at one or another season, the temperate or tropical portions of the western hemisphere. To the north it sometimes pushes into Alaska, having been found on the Yukon by Mr. Dall, while in the opposite direction the records attest its presence at least as far south as Peru and Brazil. It is somewhat singular, considering its extensive dispersion in North America, that it has never been noted from the United States west of the Rocky Mountains, a circumstance the more remarkable from the fact that all through the great plains just east of these it is more numerous than anywhere else in our country, migrating in immense flocks in spring and fall, and breeding abundantly within our limits. I suspect that its apparent absence from the Pacific side is simply a default of record, which will in time be supplied.

"However this may be, time will decide. At present we may occupy ourselves with a sketch

of its movements and habits, particularly during the breeding-season. We will begin with the opening of the spring season, when the birds that have wintered on or near our southern border, together with the numbers that passed in the fall preceding into tropical regions, all alike feel the mysterious impulse and start in immense parties for the north. They travel by all routes, both coastwise and interior; but I should guess, from the unnumbered thousands that pass over the grand prairies lying between the Mississippi and the Rocky Mountains, that this was their great highway. There the 'Prairie-Pigeon,' as it is generally called in the West, is much more abundant than it is in settled districts eastward. Flock after flock of great extent passes in May through Kansas, Nebraska, Iowa, Minnesota, and Dakota, accompanied by equal numbers of Esquimaux Curlews and Golden Plover, flocking the prairies everywhere. We can at this season scarcely touch the prairie anywhere but there are these birds in profusion. Hardly exceeded in excellence of flesh, gentle and unsuspicious, of lithe and graceful shape, and prettily variegated colours, the Bartram's Tattlers are deservedly especial favourites, both with the naturalist and the sportsman. If the truth must out, altogether too many are destroyed at this season, when they ought, in policy no less than in mercy, to be unmolested; but few can resist the tempting shots that the birds offer. They scarcely seem to know fear, but will stand gazing at the passer-by with the utmost unconcern, offering the fairest possible marks. By the end of May those that are to breed further north have passed on, while the remainder have paired and are about nesting.

"The pairs keep close company, rambling through the grass often side by side, and frequently uttering their curious love-notes. 'The grand passion' makes them almost musical at this time, such is its potency to draw songs of gladness from throats not often tuneful. The note peculiar to this period is a long-drawn, soft, mellow whistle, of almost mournful cadence, sounding, when heard at a distance, like the noise of the wind, and of wonderful effect upon the hearer when it comes to his ear over the solitude of the boundless prairie. It is oftenest emitted at the close of a flight, at the moment when the bird, just alighted, throws up its long, thin, pointed wings preparatory to adjusting them over the back; and not seldom it comes to the ear in the watches of the night, when its weird quality is enhanced by the darkness, till we almost fancy we hear the wailing of a lost spirit. Besides this outcry the Tattler has a harsh scream, much like that of others of its tribe, quickly and often repeated, when, the nesting-places being invaded, the birds hover overhead on anxious wing, soliciting respite.

"In Dakota, where I became familiar with their breeding-habits, the birds lay early in June; they are pretty constant in this matter, nearly all the nests being filled by the second week in that month. Here only one brood is raised each season. The nest is hard to find—not that it is concealed with special artifice, but that there is upon the broad prairie absolutely nothing to guide a search, so that the finding is almost necessarily a matter of chance. It is curious, too, how great concealment is effected by the few flimsy blades of grass that may curve over the nest, just shading the eggs till their variegation blends with the ground and the herbage. There is nothing peculiar in either the site or construction of the nest; it is a slight depression of the ground, lined with a leaf or two, or a few blades of grass. I have stumbled on nests far out in the prairie, away from any land-marks, but oftener found them near some pool or slough, or by the edge of a piece of wood or weedy patch—always, however, in an open and perfectly dry spot.

The female sits hard, often only flushing when almost stepped upon. Before the complement is filled, and even early in incubation, she will, when disturbed, fly slowly to a little distance and alight in silence to watch the fate of her charge; but when the eggs are more advanced she displays greater solicitude, and tries all her arts to draw attention from the nest to herself, practising resolutely the pious deception of feigned lameness, even at the expense of her life. On such occasions she is usually soon joined by her mate, who hovers slowly around with deeply incurved wings, uttering the most piteous cries, that alarm the whole neighbourhood. As many pairs are often breeding within ear-shot, the clamour becomes general, a dozen or more pairs joining in the outcry, which does not subside until the intruder has entirely withdrawn.

"The eggs are ordinarily four in number. The numerous sets I have collected are rather notably constant in their characters, considering how variable Waders' eggs usually are. In size they are from 1.70 to 1.90 inch in length by 1.25 to 1.30 in breadth, averaging about 1.75  $\times$  1.28 inch. The shape is less pointedly pyriform than that of some species; still the characteristic limicoline contour is rendered. The ground is pale clay-colour, or very light drab, sometimes almost creamy, at other times with a slight olivaceous shade. The markings are numerous, and generally distributed, though apt to be much the most thickly aggregated at the larger end; they are for the most part small, often mere dots, of sharp outline, umber-brown in colour; with them are a lesser number of the underlying pale purplish-grey shell-markings. However numerous, the spots are rarely if ever confluent or massed in blotches of any size; the largest I have noticed are no broader than a split pea.

"The young birds, which are mostly all abroad before the end of June, are curious-looking little creatures before they gain their feathers—helpless, clumsy, with a top-heavy appearance and disproportionately long legs. They remain in the down, or at most gain but stray feathers, until they are about half-grown; and during all this time they are led about under the watchful and anxious care of the mother bird, whose boldness in defence of her charge now knows no bounds. Once holding a young bird I had caught in my hands, I was almost attacked by the parent, who, after exhausting her artifices in behalf of her young, became frantic at the cries of the captured one. In this early stage the young are entirely white below, finely mottled with black, white, and rich brown above; the feet and under mandible are light-coloured; the upper mandible is black.

"Although eminently terrestrial, like their relatives, these Tattlers not unfrequently alight on fences, posts, even limbs of trees; in certain districts telegraph-poles are favourite stands. They are generally dispersed over the northern prairies during the summer, yet they have their preference for certain spots in the vicinity of moist ground. Away from the river-valleys their resorts are the numberless depressions of 'rolling' prairie, where the vegetation is luxuriant, fed by the water that collects during the spring rains. Passing through such spots one often disturbs a whole colony, when the birds will rise high on wing, even fifty or a hundred yards in the air, and there hover, all the while vociferating remonstrance. Later in the season, when the young no longer require care, the birds 'make up' into flocks, often of immense extent, and old and young together assume the routine of their lives. They leave these northern regions early: I have seen none after the fore part of September. Their food is mainly insects, and during the summer seems to consist principally of grasshoppers, of which almost inconceivable hosts haunt

the prairies. They also eat various other animal substances, as well as berries. They are generally in excellent flesh, and in the fall become sometimes extraordinarily fat. They are delicate birds, dropping to a touch of shot."

In my collection I have a series of nearly fifty eggs of this bird, which, however, I need not describe, as I cannot add any thing to the very graphic description above by Dr. Coues.

The specimens figured are an adult bird in full plumage, and a young bird in down, both being those above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀. Wisconsin, June 5th and 9th, 1869 (*Dr. Brewer*). *c*. New Jersey (*J. Krider*). *d*, ♂. Republican River, Kansas, May 26th, 1864 (*Dr. E. Coues*). *e*, *f*. San Antonio, Texas, spring of 1864 (*H. E. D.*). *g*, ♂. Medina, Texas, April 10th, 1864 (*Dr. Heermann*). *h*. Puebla, Mexico (*Rébauch*). *i*, *k*, *l*, *pulli*. Iowa (*J. Krider*).

*E Mus. Salvin and Godman.*

*a*. Big Blue River, Utah (*Capt. J. H. Simpson*). *b*, ♀. Guadalupe Savanna, April 1862. *c*, *d*, ♂. Isthmus of Panama (*M<sup>c</sup>Leannan*). *e*. New Granada (*Hübner*). *f*, ♂. Dueñas, Guatemala, April 12th, 1858 (*O. Salvin*). *g*. Bogota. *h*, ♀. Medellin, U. S. C. (*Salmon*). *i*. Chili, March 1874 (*Leybold*). *k*, *l*, ♂. Pebas, E. Peru, April 8th and March 29th, 1874 (*J. Hauzwell*). *m*, ♀. Gusanga, Brazil, 1822 (*Natterer*).

## Genus TOTANUS.

- Tringa* apud Brisson, Orn. v. p. 117 (1760).  
*Limosa* apud Brisson, tom. cit. p. 276 (1760).  
*Scolopax* apud Linnæus, Syst. Nat. i. p. 245 (1766).  
*Totanus*, Bechstein, Orn. Taschenb. ii. p. 284 (1803).  
*Glottis* apud Koch, Syst. d. Baier. Zool. p. 305 (1816).  
*Limicula* apud Leach, Syst. Cat. M. & B. Brit. Mus. p. 32 (1816).  
*Actitis* apud Boie, Isis, 1822, p. 560.  
*Erythroscelus* apud Kaup, Natürl. Syst. p. 54 (1829).  
*Gambetta* apud Kaup, ut suprâ (1829).  
*Rhyacophilus* apud Kaup, op. cit. p. 140 (1829).  
*Helodromas* apud Kaup, op. cit. p. 144 (1829).  
*Iliornis* apud Kaup, op. cit. p. 156 (1829).  
*Guinetta* apud G. R. Gray, List of Gen. of B. p. 68 (1841).  
*Tringoides* apud G. R. Gray, op. cit. p. 88 (1841).

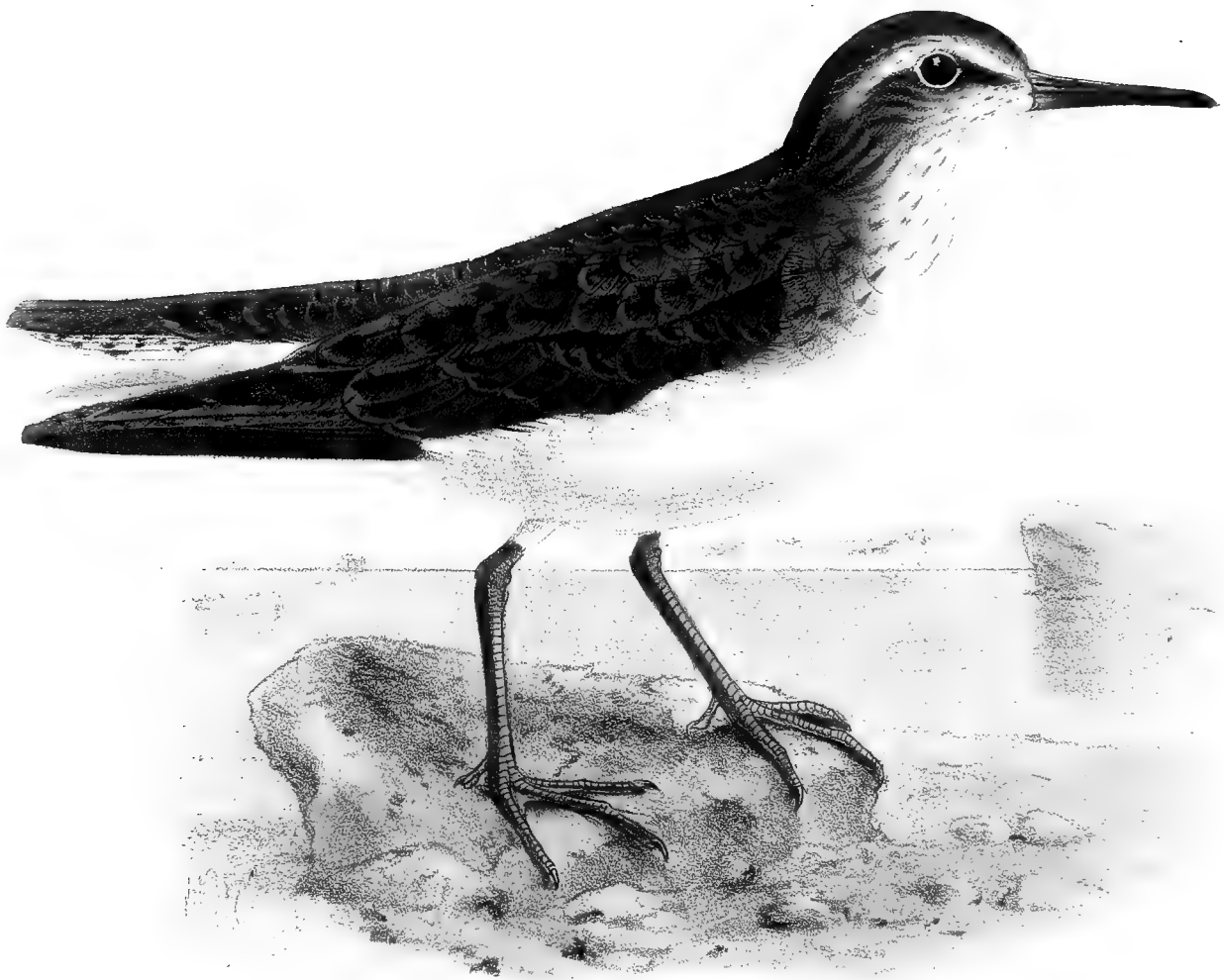
THIS genus is extremely widely distributed, being represented in the Palæarctic, Ethiopian, Oriental, Australian, Nearctic, and Neotropical Regions, six species being resident and common in the Western Palæarctic Region. Several other Nearctic species have been recorded as having occurred in the Western Palæarctic Region; but after a careful examination of the data on which they have been included, it appears to me to be advisable to exclude them. These species are *Totanus flavipes* (Gmel.), *Totanus solitarius*, Wils., and *Totanus macularius*, all of which have been included in the British list. The first and last of these species may possibly be allowed in our list; but, so far as I can ascertain, there is no occurrence of either on record that is not open to doubt; and as regards *Totanus solitarius*, the only record is that of one said to have been obtained on the Clyde "some years ago" (*fide* R. Gray, Ibis, 1870, p. 292); and as this bird so closely resembles the Wood-Sandpiper it may very possibly have been a case of mistaken identity. It may be distinguished by having each tail-feather broadly barred with black across both webs, and the upper tail-coverts greenish brown instead of white. Another American Sandpiper, *Totanus semipalmatus*, is said to have occurred in Scandinavia; but this has proved to be a misstatement, as this bird has never been procured there.

The Sandpipers belonging to the genus *Totanus* frequent both the sea-coast and inland marshes, pools, and the banks of rivers, &c., being found inland during the breeding-season, and on the coasts usually during the seasons of passage. They walk and run with ease, and have a rapid flight. They feed on small insects, worms, minute mollusks, &c., and frequently wade in the water in search of their food. When wounded they will swim and even dive with ease. Their call-note is a clear whistle, either uttered when the bird is on the wing or when it is standing or running on the ground. They nest on the ground, usually near water; but one species (*Totanus ochropus*) has the peculiar habit of depositing its eggs in the deserted nest of some other bird, selecting such as are built in trees, frequently at some altitude. They deposit four eggs, which are somewhat variable in coloration, some being greenish grey or dull stone-

grey spotted and blotched with pale purplish grey and brown of various shades, and others being ochreous grey or warm ochreous buff spotted and marked with lighter and darker reddish brown and pale purplish grey.

*Totanus fuscus*, the type of the genus, has the bill considerably longer than the head, slender, straight, soft, and flexible at the base, becoming hard towards the point, which is narrow but obtuse, both mandibles grooved to about the middle; nostrils small, linear, basal; wings long, pointed, the first quill longest, inner secondaries elongated, tapering; tail short, slightly rounded or nearly even; legs long, slender; tibia bare for a considerable distance; tarsus scutellate, long, slender; hind toe small, elevated; anterior toes long, slender, united at the base by webs, of which that between the outer and middle toe is the largest; claws very small, stout, slightly curved, very obtuse.





J. G. Keulemans lith

M. N. H. van der

COMMON SANDPIPER.  
TOTANUS HYPOLEUCOS

## TOTANUS HYPOLEUCOS.

(COMMON SANDPIPER.)

- Tringa guinetta*, Briss. Orn. v. p. 183, pl. xvi. fig. 2 (1760).  
*Tringa hypoleucos*, Linn. Syst. Nat. i. p. 250 (1766).  
*La Guignette*, Buff. Hist. Nat. Ois. vii. p. 540 (1780).  
*Tryngra guinetta*, Pall. Zoogr. Rosso-As. ii. p. 195 (1811).  
*Tryngra leucoptera*, Pall. tom. cit. p. 196 (1811).  
*Totanus hypoleucos* (L.), Temm. Man. d'Orn. p. 424 (1815).  
*Totanus guinetta*, Leach, Syst. Cat. M. & B. Brit. Mus. p. 30 (1816).  
*Actitis hypoleucos* (L.), Boie, Isis, 1822, p. 560.  
*Actitis stagnatilis*, C. L. Brehm, Vög. Deutschl. p. 649 (1831).  
*Guinetta hypoleuca* (L.), G. R. Gray, List of Gen. of B. p. 68 (1841).  
*Tringoides hypoleuca* (L.), G. R. Gray, op. cit. p. 88 (1841).  
*Actitis empusa*, Gould, P. Z. S. 1847, p. 222.  
*Actitis megarhynchos*, C. L. Brehm, Vogelfang, p. 314 (1855).  
*Actitis schlegeli*, Bp. Compt. Rend. xliii. p. 597 (1856).

*Chevalier guignette*, French; *Andarios, Correrios*, Spanish; *Piro-piro piccolo*, Italian; *Beggazina tar-rocca*, Maltese; *Fluss-Uferläufer, trillernder Strandläufer*, German; *Oeverlooper*, Dutch; *Muddersneppe*, Danish; *Strandsnipe*, Norwegian; *Drillsnäppa*, Swedish; *Rantatilleri*, Finnish.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 850; Werner, Atlas, *Gralles*, pl. 24; Kjærb. Orn. Dan. taf. 36; Fritsch, Vög. Eur. taf. 33. fig. 13; Naumann, Vög. Deutschl. taf. 194; Sundevall, Svensk. Fogl. pl. 41. fig. 3; Gould, B. of Eur. pl. 318; id. B. of G. Brit. iv. pl. 58; id. B. of Asia. pl. 35; Schlegel, Vog. Nederl. pl. 240.

*Ad.* capite et corpore suprâ olivaceo-fuscis vix metallico tinctis, pileo, nuchâ et dorso vix nigro striatis: tectricibus alarum, scapularibus et suprâcaudalibus nigro centraliter angustè striatis et fasciatis: remigibus primariis nigricantibus, intimis versus basin conspicuè albo marginatis, secundariis ad basin albis et eodem colore terminatis: rectricibus centralibus dorso concoloribus, reliquis albis nigro fasciatis, intimis griseo-cervino lavatis: mento et striâ superciliari albis: colli lateribus et pectore pallidè cinereis, nigricanti striatis: corpore reliquo subtùs albo: rostro ad basin sordidè carneo, versus apicem fusco: iride fuscâ: pedibus cinereis viridi tinctis.

*Juv.* adulto similis, sed plumis in corpore suprâ ochraceo-fusco apicatis et angustè nigro fasciatis, tectricibus alarum magis eodem modo notatis, pectore saturatiùs cinereo.

*Adult Male* (Tolagi, Archangel, 14th May). Upper parts olivaceous brown with a bronze gloss, the crown, hind neck, and back striped with black, and the wing-coverts, scapulars, and upper tail-coverts barred

and centrally narrowly striped with that colour; primary quills blackish, the inner ones being broadly margined on the inner web with white towards the base, the short spurious quill pure white; secondaries tipped with white, and having a broad white band towards the base of the feather, being otherwise blackish; central tail-feathers coloured like the upper parts, the remainder white barred with blackish, the inner ones washed with greyish buff; chin and a streak over the eye white; sides of the neck and breast pale ashy grey, striped with blackish, rest of the underparts pure white; bill dull flesh-colour at the base, otherwise dark brown; iris dark brown; legs grey with a greenish tinge. Total length about 7·75 inches, culmen 1·1, wing 4·5, tail 2·55, tarsus 1·0.

*Adult Female* (Archangel). Resembles the male, but is a trifle less in size.

*Young* (Pagham, July). Differs from the adult in having the upper parts not marked with black only, but the feathers tipped with brownish ochreous, and narrowly barred with black, these markings being most conspicuous on the wing-coverts; sides of the breast darker grey than in the adult.

*Winter plumage* (Malacca). Differs from the summer dress in being more uniform and much less marked with black above, and in having the throat and breast greyer and more striped.

*Young in down*. Covered with close, soft down; upper parts light ash-grey, dotted with black; a black line passes through the eye; and a deep-black stripe runs from the base of the bill along the head, nape, and the centre of the back.

THE range of this Sandpiper is very extensive; for it is met with throughout Europe, Africa, down to the Cape colony, and Asia, down to the Malay archipelago, being also found in Australia. In Europe it is, general speaking, a summer visitant, retiring south in the late autumn.

Throughout Great Britain it is generally distributed during the summer season; but it breeds only rarely in the south of England; and it is somewhat remarkable that it visits our eastern counties only during the seasons of passage, not remaining to breed there. According to Mr. A. G. More (*Ibis*, 1865, p. 436) it is "scarce in the south of England during the breeding-season, and apparently wanting in several of the southern and eastern counties. The common Sandpiper is reported to breed only occasionally in Cornwall, but regularly in North and South Devon and Somerset. In Dorset it becomes more rare, though Mr. Groves has seen it on several small streams. Mr. Knox describes it as breeding regularly in Sussex, where, however, it must be scarce, as Mr. Borrer has only once found the nest. It seems doubtful whether the bird breeds in Kent; and it appears to be wanting in several of the eastern and southern districts." Mr. Stevenson mentions that Mr. J. H. Gurney, when staying at Pembroke in 1867, was informed on good authority that it nests regularly in that county. In Scotland it is generally distributed. Mr. Gray writes (*B. of W. of Scotl.* p. 297) as follows:—"I have seen it occasionally in gardens and orchards on the banks of the Clyde, near the town of Lanark, forming its nest under bushes, in flower-pots, and among growing plants. Mr. Alston informs me of having taken similar notes on its nesting-habits near Lesmahagow; but in such cases it is invariably found in the immediate vicinity of water. Frequently I have seen pairs select a turnip-field contiguous to the water of the Girvan, and lay their eggs under the leaves of the growing plants—a habit acquired from experience of previous floods which had for one or two seasons in succession swept away their nests from the banks of shingle on which most persons, as well as birds, would have thought them safe

against such a mishap. The fact of these Sandpipers transferring their nursery to the fields on the other side of the embankment, and persistently remaining in their new quarters, shows that the same pairs frequented the river on their return to this country, and had a wise recollection of their bygone misfortunes." Mr. J. A. Harvie-Brown says, in Sutherlandshire this bird is "exceedingly abundant, and generally found on the lochs which lie at no great altitude, or on the banks of small burns. It arrives in Sutherland, as nearly as I can ascertain, in the last week of April, which is a little later than in more southern counties. Upon the summit of Ben Chaorin, which is about 2700 feet above the sea, in two successive seasons I have met with one pair of these birds, evidently breeding. This, however, is the only instance I know of its being found at such an altitude in this country, though I understand it is occasionally met with at an even higher elevation in one or two localities in Scotland. I have found the nest of this species sometimes protected above by a projecting rock or boulder; but it is generally placed on the open ground amongst grass. It breeds on the islands and shores of both inland and sea-lochs." Messrs. Baikie and Heddle speak of it merely as an occasional visitor to Orkney; but Dr. Saxby says that it has been found breeding in Shetland. Mr. Edmondston, in error, recorded it as a winter visitant to these islands, but afterwards corrected himself. It is stated by Thompson to be generally distributed in Ireland, but does not appear to occur in Greenland or Iceland. In Scandinavia it is common. Mr. Collett informs me that it is generally distributed on the rivers and lakes of Norway, but is always in small numbers in the vicinity of the salt water. On the fells it is commonly distributed up to the snow-region. Nilsson says that it is the commonest Sandpiper in Sweden, and is found from the south of Skåne up to the north of Lapland, and on the sides of the fells as high as the woods and bush-growth extends. It arrives in Sweden in April, and leaves in September.

According to Dr. Palmén (Finl. Fogl. ii. p. 166) there is scarcely any portion of Finland where it is not tolerably common, from the extreme south up to the Arctic Ocean, and eastward to Onega. Only Von Middendorff states expressly that he never saw it when travelling in the Lapland peninsula; nor did Lilljeborg record it from Schuretskaja. On the south coast it is scarcely found on the outer fringe of islands. Messrs. Alston and Harvie-Brown state that they first met with it at Suja, on the Dwina, and afterwards in great numbers on the banks of the Ijma river, where it was more numerous than the Terek Sandpiper, yet they never once met with it on the islands in the delta of the Dwina. It is, they add, a common species, but is very locally distributed. Messrs. Seebohm and Harvie-Brown record it (*Ibis*, 1876, p. 292) as being far from abundant on the Petchora, as far as they had opportunities of judging, and they only saw or obtained examples of it upon the stretch of the river between Habariki and the Yorsa river. Sabanäeff informs me that it is very common throughout the whole of Central Russia, and he met with it numerous in the Ural, where, he says, it breeds along the rivers on the eastern slope in the Pavda district. Throughout North Germany it is very generally distributed, and common during the summer season; and Mr. J. Collin says that it arrives in Denmark in April or May, and leaves in September or October. A few remain to breed; and it is tolerably common during the autumnal passage. In the Duchies it is common both in the interior and on the coast. In Holland it is stated to be common in the summer season; and it arrives in Belgium in April, breeds on some of the islands of the Meuse, and leaves late in the summer, at which season it is

very common on the banks of the Meuse and the Escaut. It is stated by Degland and Gerbe to occur periodically on passage in most parts of France, and breeds near Boulogne, in the marshes of Guignes, near Calais, on the banks of the Seine, in Anjou, and in many other parts of France. M. Adrien Lacroix records it as common and generally distributed throughout the French Pyrenees during summer, arriving early in April, and leaving late in September or early in October. Professor Barboza du Bocage says that it is rather rare than otherwise in Portugal; but it is common in Spain. Colonel Irby states (*Orn. Str. Gibr.* p. 168) that it "swarms about the Straits of Gibraltar in March and April, passing in lots of four or five together." He had no record of any in November, but saw one on the 24th of October and one on the 7th of December. In spring they are not abundant until the month of March, their passage being at its height about the 15th of April. He never found its nest, but believes that it breeds there, as he saw a pair near the mouth of the Guadiarro at the end of May, which, from their manner, were, he says, certainly nesting. Mr. Howard Saunders states (*Ibis*, 1871, p. 388) that he obtained one in winter at Malaga. Mr. A. von Homeyer records it as tolerably common on the Balearic Islands, and adds that it certainly breeds there. In Italy it is stated by Count Salvadori to be common during the summer season; and Mr. A. B. Brooke says the same as regards its occurrence in Sardinia, and adds that he saw one in the month of March. According to Malherbe it is found in Sicily both in summer and winter, but more numerous during the latter season; and Mr. C. Bygrave Wharton saw a few along the shore at Ajaccio, in Corsica, during the winter, and observed a pair near Biguglia on the 22nd of April.

In his notes on the birds of Malta and Gozo (*Ibis*, 1864, p. 147), Mr. Wright states that it is "very common in spring and autumn. Arrives in March, and is common till May. It then becomes scarce, and, until the middle of July, it is rarely seen. About this time small flocks reappear on the coast; and in August and September it is again common. It almost entirely disappears in winter. A few probably breed here in summer." It is found in most parts of Southern Germany. Dr. A. Fritsch says (*J. f. O.* 1871, p. 388) it breeds here and there in Bohemia, as, for instance, on the Hetzinsel, near Prague, and on the Valtava, near Horazdovic, and is seen near water during passage. According to the late Mr. E. Seidensacher the common Sandpiper breeds numerous in Styria, on the shores of the Sann and Woglana, on the Kötting, near Neukirchen, and near Gairach, where he found pairs breeding far up the stream. It arrives there in March or early in April, and leaves late in August or early in September. It is found throughout Austria; and is said by Messrs. Danford and Harvie-Brown to be common in Transylvania. According to Dr. Krüper it is tolerably common in Greece, where it is found throughout the summer. Erhard includes it as a resident in the Cyclades; Colonel Drummond-Hay says that it occurs singly in winter in Macedonia; and Lord Lilford writes that it is common at all seasons on the rocky parts of Epirus and Corfu. Messrs. Elwes and Buckley state that it is not uncommon on the Bosphorus; it is common in Southern Russia, and is found in Asia Minor on passage; but I lack information respecting its distribution there. Canon Tristram obtained it in Palestine; and Mr. C. W. Wyatt states (*Ibis*, 1870, p. 17) that he found it common on the sea-shore in the peninsula of Sinai.

Throughout Africa it is very widely distributed, being found as far south as the Cape colony. Messrs. Finsch and Hartlaub give most excellent details respecting its range on that continent as

well as in Asia; and I have found their work most useful in working out the range of this as well as of many other species included by them. Von Heuglin says that he met with it throughout North-east Africa, but it was very much more numerous in the autumn, winter, and spring than in the summer. Southwards it ranges to East Kordofan, the White and Blue Nile, Abyssinia, and the Gulf of Aden, near both the salt and fresh water. He never found it breeding, but believes that it does nest in North-east Africa. Mr. Blanford records it as common near inland streams in Abyssinia. It is found not uncommonly in Algeria; and M. Favier states that it is the most common of the Sandpipers around Tangier, passing north during April and May, and returning in August, September, and October. It occurs all down the west coast of Africa and on the Canaries. Berthelot states that it visits every winter the sandy shores of Canaria, Lanzarote, and Graciosa; and Mr. Godman says (*Ibis*, 1872, p. 221) that he saw two or three pairs in Teneriffe, between Candelaria and Santa Cruz, during the breeding-season. He also observed it towards Anaga Point, and has little doubt that some few pairs nest along this shore. Dr. Finsch records it from Accra, Pel from the Gold Coast, Riis from Aguapim, Dohrn from Prince's Island, Du Chaillu from the Gaboon; Mr. Andersson obtained several examples in Damara Land; and Mr. E. C. Layard records it from the Cape of Good Hope, where, however, he says, it is rather rare. He gives particulars of the occurrence of three specimens, and adds that he saw one or two at Zoetendals Vley in November 1865. Captain Shelley shot specimens near Durban; Mr. Gurney records it as scarce in the Transvaal; and Dr. Kirk states that it frequents open sandy places on the river-bank along the Zambesi and Shiré. Messrs. Newton and Pollen record it from Madagascar, the Mauritius, Réunion, Nossi-bé, and the Seychelles: and the former says (*Ibis*, 1863, p. 457) that in Madagascar it is common on the Hivondrona and up the coast; but all the specimens obtained appeared to be young birds. In Mauritius he met with it from September to April only; and therefore it probably goes north to breed.

In Asia it is also very widely distributed. Mr. Blanford met with it here and there in Baluchistan in winter; and Dr. Severtzoff states that it breeds throughout Turkestan. Dr. Henderson writes (Lahore to Yarkand, p. 288) that it was "often seen in May and June in Kashmir (where it breeds in considerable numbers), but was not obtained either in Ladak or Yarkand. However, on the return journey a specimen was procured near the Suket Pass, at the height of 17,000 feet, which is there just below the level of perpetual snow. Although the bird was overlooked at Yarkand, it seems probable that this individual was on its way back from that country (or possibly some more northern region) to the plains of India." According to Dr. Jerdon (*B. of India*, ii. p. 699), it is found in India in winter, but is less common than the Wood- and Green Sandpipers; but Mr. Blyth states (*Ibis*, 1867, p. 169) that it is certainly very common in Lower Bengal during cold weather. Mr. E. W. H. Holdsworth says that it is very common in all parts of the low country in Ceylon, and less so on the hills. He has seen it as high as Nuwara Eliya in February; and, he adds, it is probably resident in Ceylon. It appears to be widely distributed in Siberia. Von Middendorff met with it up to the vicinity of the ridge of the Stanowoi Mountains, and towards the end of August on the south coast of the Sea of Ochotsk. It also occurs, he says, in the Sajon Mountains. Dr. Radde obtained it on Lake Baikal, but says that he does not recollect to have seen it in Mongolia; and Von Schrenck says that it was extremely common all along the Amoor. He first observed it near Tebach, near the mouth of the Amoor, on the

16th (28th) of May, where it must have been already some time. Mr. Maack met with it in various parts of the Amoor in July and August, and also obtained it from the Lower Schilka. It is said to be found in Kamtschatka; and Mr. Swinhoe records it (*Ibis*, 1874, p. 163) from Japan, where, he states, a female was shot in April, and a male in May, at Hakodadi. He also states that it is found throughout China, Formosa, and Hainan, and is very common. The Marquis of Tweeddale has received specimens shot on Ross Island in December, and the South Andamans in January; and, according to Mr. A. O. Hume (*Str. Feathers*, ii. p. 299), Mr. Davidson says:—"This is certainly the most common of all the shore-birds that occur at the Andamans and Nicobars; it frequents the sea-shore, saltwater creeks, freshwater streams; in fact there is scarcely a little puddle about the place where it cannot be found. I have seen it in small parties; but it is usually found single or in pairs. At night it roosts in small parties among the mangroves or in some branch overhanging the water." It has been met with in the Philippines by Cuming, and in the Nicobars by the Novara expedition. Messrs. Hartlaub and Finsch record it from the Pelew Islands; and it has been obtained in Java, Sumatra, Borneo, Banka, Celebes, Ceram, Amboina, in the Eastern Moluccas, Halmahera, Ternate, Batchian, Morotai, the island of Samao, Flores, Timor, Waigiu, and New Guinea. Mr. Gould says (*Handb. B. of Austral.* ii. p. 263) that he has seen specimens from every part of Australia, except the north coast, and Gilbert observed it at Swan River and Port Essington. In the Nearctic and Neotropical Regions it is replaced by *Totanus macularius*.

As may be inferred from the name, "Summer Snipe," by which it is tolerably well known in many parts of the country, the present species is a summer visitant to our island; and this is the case also in most parts of Europe. It usually arrives about the middle of April, and leaves us again in September. It is not often met with on the sea-shore; but, like the Green Sandpiper, it frequents the shores of streams, ponds, inland lakes, and is often seen on the muddy banks of rivers, and especially affects places where the banks are flat, and where meadows and bush-covered patches are in the immediate vicinity. It is also said to be fond of places where there is a tolerably dense growth of willows or osiers, avoiding streams or lakes where the shores are rugged or rocky. In many respects it differs not a little from most of the other Sandpipers. When walking or standing it usually carries the body horizontal, and not erect, the breast being rather depressed, so that the long tail is raised above it. It trips along for some distance with grace and ease, jerking its tail and nodding its head, and reminds one not a little of the common Wagtail, and is seldom seen for long standing quietly, but is continually on the move. Its flight is rapid; and it usually flies close above the surface of the water, often so close as nearly to touch it with its wings. Its flight is not direct, but it moves during its course in various directions, like the common Snipe; and when flying its wings are held extended, the points bent downwards: this latter is especially noticeable just before the bird settles. It is a shy and very wary bird, and selects for a resting-place some spot where it is not easily seen; and when disturbed it takes wing, uttering its clear shrill cry, which resembles the syllables *di di di* uttered several times in succession. During the breeding-season it pours forth, whilst on the wing, a shrill trilling song, composed of the above syllables somewhat modulated.

It breeds in quiet unfrequented places on the banks of a stream, often amongst the willow-thickets; and its nest is usually carefully concealed. The nest is either amongst the rubbish

collected together and left by the receding water, or on the ground in the grass or heather, and is a mere depression lined with a few withered grass-blades.

The eggs of the common Sandpiper, four in number, are pyriform, large for the size of the bird, and vary somewhat in coloration and markings. In a large series in my collection I find the ground-colour varies from creamy white to warm stone-buff, and the markings from dull red to brownish red. These latter are sometimes sparingly spread over the surface of the egg, and sometimes thickly dotted, and consist of small spots with a few larger blotches, intermixed with a few purplish grey shell-markings. In size they vary from  $1\frac{1}{4}$  by 1 inch to  $1\frac{1}{4}$  by  $1\frac{1}{4}$  and  $1\frac{1}{4}$  by  $1\frac{3}{4}$  inch.

Naumann says that many of the nests he has found were better constructed than those of most of the Waders, and were nearly as well built as some nests of the Skylark; but the nests I have seen were usually very poorly made, and could scarcely be dignified with the name of nest, being, as above stated, a mere depression loosely lined with dry grass-blades. It sometimes nests amongst the stones and shingle on the banks of a river; and Mr. Thompson says that he knew an instance of a pair having built their nest in a gooseberry-bush in a garden close to a pond near Belfast.

The eggs are incubated by the female, who sits with great assiduity. After about fourteen days the young emerge from the eggs, and leave the nest almost immediately, and are most carefully tended by their parents until able to provide for themselves. When alarmed, they squat motionless on the ground, and trust thus to avoid observation; and the old birds use every endeavour to entice away the intruder. Sometimes they are said to take to the water and swim with ease. I have seen the old birds, when wounded, take to the water and swim and dive with the greatest facility.

The food of the common Sandpiper consists of insects, insect-larvæ, and worms of various kinds; and the gizzard usually contains a few small stones.

Mr. G. R. Gray and several recent authors give as a synonym of this species *Tringa canutus*, Retz.; but on reference to Retzius's description (Faun. Suec. p. 189) it appears to me that it is not applicable to the present species; and, moreover, he gives references to prior authors, who decidedly refer to the Knot. In his 'Gen. of Birds' (iii. p. 514) he gives *Tringa pacifica*, Lath. (Lamb. Icon. inedit. iii. p. 26), and in his 'Hand-list of Birds' (iii. p. 46) *Tringa aurita*, Lath. (Ind. Orn. Suppl. p. lxvi), as synonyms; but the latter of these is certainly not referable to the common Sandpiper, and the former I have not been able to verify. Mr. Giebel (Thes. Orn. i. p. 271) gives amongst his list of synonyms *Tringa cinclus* of Boddaert, as founded on Pl. Enl. 850; but on reference to Boddaert's Tabl. des Pl. Enl. p. 52, I find that he refers to the species figured on that plate under the name of *Tringa hypoleucos*, L., and not *Tringa cinclus*.

The specimen figured is an adult male, in full breeding-plumage, from Archangel, now in my collection.

In the preparation of the above article I have examined the following specimens:—

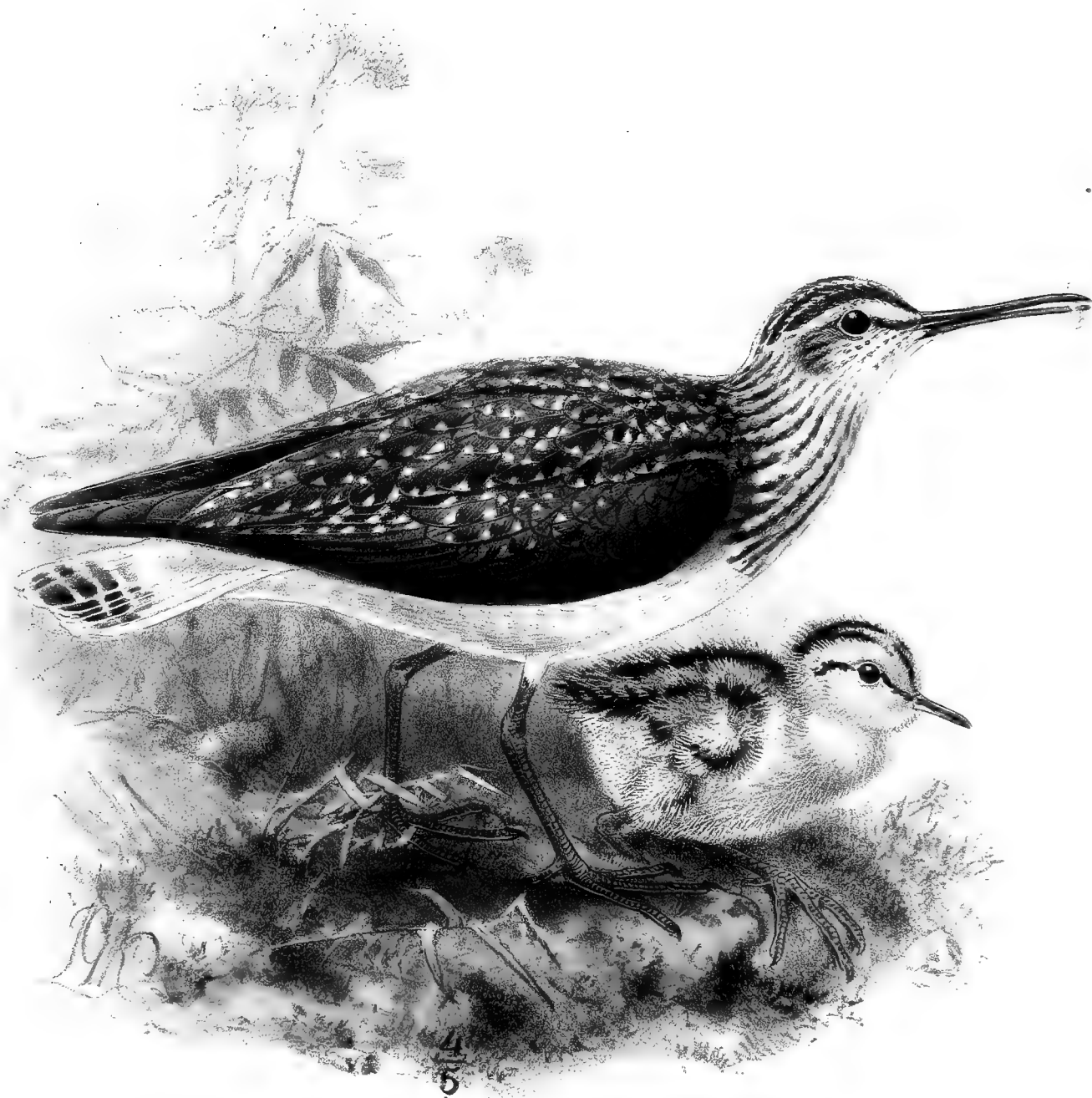
*E Mus. H. E. Dresser.*

*a, b, juv.* Pagham, Sussex, 1870. *c, d.* Pagham, April 26th, 1872 (*R. B. Sharpe*). *e.* Kingsbury, Middlesex, (*J. E. Harting*). *f, ♂.* Tolagi, Archangel, May 14th, 1876. *g, ♀.* Lodma, Archangel, May 14th, 1876 (*Piottuch*). *h.* Egypt, March 9th, 1868 (*G. E. Shelley*). *i, ♀.* Ain, Abyssinia, August 17th, 1868 (*W. Jesse*). *k.* Fantee (*Ussher*). *l.* Gambia (*Whitely*). *m.* Malacca (*Whitely*).

*E Mus. J. E. Harting.*

*a, ♂.* Northumberland, May 1863 (*J. E. H.*). *c.* Breydon Harbour, Norfolk, September 12th, 1873 (*J. E. H.*). *d, e, f.* Kingsbury, Middlesex (*J. E. H.*). *g.* Ajaccio, Corsica, December 19th, 1874 (*C. B. Wharton*). *h.* Morocco (*Boucard*). *i.* Angola (*Boucard*). *k.* Objimbique, Damara Land, September 8th, 1866 (*Andersson*). *l.* Waliko, Abyssinia, July 23rd, 1868 (*Jesse*). *m.* Zanzibar (*Kirk*). *n.* Mauritius, January 14th, 1864 (*W. H. F. Power*). *o.* Aden, October 16th, 1873 (*E. L. Layard*). *p.* Darjeeling, India (*Col. Sharpe*). *q.* Amoy, China, October 15th, 1866 (*R. Swinhoe*). *r.* Nagasaki, Japan, September 1865 (*Whitely*). *s.* Menado, North Celebes (*Wallace*).





J. H. M.

M & N. Hanhart imp

GREEN SANDPIPER.  
TOTANUS OCHROPUS.

## TOTANUS OCHROPUS.

(GREEN SANDPIPER.)

*Tringa* —, Brisson, Orn. v. p. 177, pl. xvi. fig. 1 (1760).*Tringa ochropus*, Linn. Syst. Nat. i. p. 250 (1766).*Le Bécasseau*, Buff. Hist. Nat. Ois. vii. p. 534 (1780).*Tringa ochropus*, Gmel. Syst. Nat. i. p. 676 (1788).*Totanus ochropus* (L.), Temm. Man. d'Orn. p. 420 (1815).*Helodromas*, Kaup (*Totanus ochropus*, L.), Natürl. Syst. p. 144 (1829).*Totanus rivalis*, C. L. Brehm, Vög. Deutschl. p. 642 (1831).*Totanus leucourus*, C. L. Brehm, op. cit. p. 643 (1831).*Totanus leucurus*, C. L. Brehm, Vogelfang, p. 313 (1855).*Actitis ochropus* (L.), Jerdon, B. of India, ii. p. 698 (1863).

*Chevalier cul-blanc*, French; *Lavandera*, Spanish; *Culbianco*, Italian; *Sweida*, Maltese; *punktirter Wasserläufer*, *Schwalbenschnepe*, German; *het Witgatje*, Dutch; *Svalesneppe*, *Svaleklire*, Danish; *Graabenet Sneppe*, Norwegian; *Gråbent Snäppa*, Swedish; *Mustasiipivikla*, Finnish.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 843; Werner, Atlas, *Gralles*, pl. 21; Kjærbo. Orn. Dan. taf. 36; Frisch, Vög. Deutschl. taf. 239; Fritsch, Vög. Eur. taf. 38. fig. 2; Naumann, Vög. Deutschl. taf. 197; Sundevall, Svensk. Fogl. pl. 41. fig. 1; Gould, B. of Eur. pl. 315. fig. 1; id. B. of G. Brit. iv. pl. 56; Schlegel, Vog. Nederl. pl. 245.

*Ad. ptil. æst.* pileo, capitis lateribus et collo saturatè fuscis, albo striatis: corpore suprà et tectricibus alarum saturatè fuscis vix olivaceo nitentibus, punctis albidis adspersis: remigibus nigro-fuscis: uropygio imo, supracaudalibus et caudâ ad basin albis: rectrice extimâ utrinque albâ, reliquis nigro-fuscis albo fasciatis: mento albo: collo reliquo et hypochondriis albis nigro-fusco notatis et fasciatis: corpore reliquo subtùs albo: rostro nigro, versus basin griseo tincto: iride fuscâ: pedibus pallidè plumbeis.

*Ptil. hiem.* capite et collo postico griseo-fuscis nec striatis: striâ albidâ a basi rostri supra oculos productâ: capitis lateribus vix albido striatis: corpore suprà ut in ptilosi æstivali colorato, sed haud albo punctato.

*Adult in summer* (Malaga, 24th June). Crown, sides of the head, and the neck blackish brown, striped with white; entire upper surface of the body and of the wings blackish brown with a faint olivaceous metallic gloss, marked all over with small white spots; lower rump and upper tail-coverts pure white: tail white at the base, the outer feather on each side also white, the next in order white, slightly marked with blackish brown, rest of the tail on the terminal half blackish brown, marked with three white bars and slightly tipped with white; chin pure white; rest of the neck and flanks white, closely marked with blackish brown, entire remaining underparts pure white; bill blackish with a greyish tinge

towards the base; iris deep brown; legs light blue or lead-grey, washed with green on the joints. Total length about 10 inches, culmen 1·4, wing 5·4, tail 2·55, tarsus 1·33.

*Young* (Smyrna, 10th August). Differs from the adult in having the head strongly tinged with grey, and scarcely marked with white; the spots on the upper parts are also not white, but yellowish or buffy white; and the outer tail-coverts are more marked than in the adult.

*Nestling* (Wermland, 3rd June). Covered with close, fine down; head greyish buff; a black line passes through each eye from the base of the bill to the nape; another broad line passes through the centre of the crown, and joins with one on each side of the crown at the nape, forming a patch, which is continued in a broad line to the rump; upper parts greyish buff and rufous, variegated with black, the latter forming to some extent a broad line on each side of the body; chin, throat, and underparts white.

*Winter plumage* (Biskra). Differs from the adult in having the head and hind neck greyish brown, unspotted; a white streak passes from the base of the bill over the eye; sides of the head slightly marked with white; upper parts as in the adult above described, but uniform in colour, without any spots; underparts as in the adult in summer.

*Obs.* I am uncertain as to whether the winter-plumaged specimen above described may not be a bird of the year; but, so far as I can see by comparison, it seems to be a tolerably old bird. Another example from Burmah, shot in March, closely resembles that from Biskra, and is equally unspotted on the upper parts.

THE range of the Green Sandpiper is, like that of many of its allies, very wide; for it inhabits Europe generally, as far north as the arctic circle, breeding in the northern districts, and retiring to the south for the winter, at which latter season it is found in Africa; and in Asia it is generally distributed as far east as China.

In Great Britain it is a tolerably common spring and autumn visitant; and as it is not unfrequently met with in summer in some localities, it is fair to infer that it occasionally breeds with us, though I can find no proof of such being the case. Mr. Stevenson, in his recently published work on the birds of Norfolk, gives all the information that appears to be available on this subject as regards its occurrence in the summer season in that county; but he also has failed to obtain any proof of a nest having been found. Throughout the southern counties the present species appears to be very generally met with, and it is also found in some localities throughout the winter, even when the country is covered with snow. Mr. Cecil Smith informs me, "it is a tolerably common late summer and autumn visitant to Somersetshire, and, I believe, breeds here, as I have had specimens brought to me as early as the 8th of August; but it is difficult to get at the brooks and pits of water which it frequents, and in old trees surrounding which it probably breeds before the corn is cut; so I do not feel quite certain of its breeding, never having found the eggs myself. A few probably also remain with us throughout the winter, as I have known it killed on the 2nd of February. In Guernsey I have only seen it in the autumn, though it probably occasionally occurs there in the spring also; but I do not think it remains to breed." I have seen it myself in many of our southern counties, and also on the east coast; and Mr. Stevenson speaks of it as being "a regular migrant, appearing singly or in pairs during April and May, and in small family groups, rarely exceeding six in number, on their return southwards at the end of July or the beginning of August;" and he adds that numbers are obtained in December and January. Colonel Irby, writing to me respecting the

present species, says, "I can add little to Mr. Stevenson's account of the Green Sandpiper in Norfolk; but it is a bird to which I have always paid great attention, and cannot help thinking that in some seasons it breeds near Boyland, although with all my efforts I have been unable to obtain a nest. One or more are to be seen there during every month in the year, frequenting certain favourite spots on the small stream or some freshly cleaned-out ditch in the meadows. The return migration commences about the 25th of July; but I have seen a single bird about all through the summer." Mr. Cordeaux says that it is far from uncommon in the Humber district, and he has little doubt that it occasionally remains to breed there; and Mr. J. H. Gurney, jun., informs me that it is not uncommon at Teesmouth, though it is not included in either of Mr. Hogg's lists, nor yet in that of Sir Cuthbert Sharp. He has seen it there as early as the 25th July. In the west of Scotland it is rare; for Mr. Robert Gray says (B. of W. of Scotl. p. 293) that, with the exception of a single specimen shot on the 10th November, 1860, near Glasgow, and another seen there, he is unaware of any instance of its occurrence on the western mainland or its island dependencies; but it has occurred more frequently on the east coast, having been met with in Caithness, East Lothian, Dumfriesshire, near Castle Douglas; and Mr. Harvie-Brown has shot it on the banks of the Carron, in Stirlingshire. Mr. Gray was also informed by Mr. Angus that it has frequently been found and probably breeds in Aberdeenshire. In Ireland, according to Thompson, it is only known as a rare visitant, but has occurred at all seasons of the year.

It does not appear to have been met with in the Færoes, but is found in Scandinavia, where it breeds. Mr. Collett informs me that in Norway it is somewhat sparsely dispersed, but breeds more or less commonly up to the Arctic circle. As a rule it is found near the lakes in the interior, and less seldom on the coast. On the Dovre it is quite numerous at Folkstuen. It arrives late in April and leaves in September or early in October. Some seasons it is quite common near Christiania on passage. According to Nilsson it arrives in Southern Sweden about the middle of April and leaves in September, being nowhere numerous, though not rare. It is said to breed near Gothenburg and in Northern Bohus, though rarely, and also on Gottland. Dr. Palmén says (Finl. Fogl. ii. p. 161):—"It is, comparatively speaking, rare in Finland, and does not occur further north than Central Finland, where, however, it breeds. Mr. Falck has shot it at Åbo; in the Finnish collection are specimens, shot on the 16th June, 1855, from Uskela, where Professor Bonsdorff shot a female containing eggs. Ekebom obtained this species at Esbo, on the 2nd August, 1840; and Kessler met with it in the Olonetz Government. A few are seen annually at Kuopio and Haminanlaks; and a young bird from there is in the Finnish collection. Finally, Aschan found it breeding in Maaninka kapell, in Northern Savolax, in 63° 12' N. lat., near Naarvanlak's posting-station, on the 4th June, 1870. It is possible that it may range further north in our country than we are aware of." In Northern Russia it is found at least as far north as Archangel. Mr. Meves met with it frequently at Novaja Ladoga and on the Dvina; and near Kargapol he saw young birds able to fly on the 3rd July. Mr. Sabanäeff informs me that it is the commonest species of Sandpiper in Central Russia, especially in the Jaroslaf and Smolensk Governments, where it breeds. In the Ural he met with it throughout the entire range from Pavda, but it does not breed, and is only seen in the Ekaterinburg and Shadrinsk districts on passage. It is found in Poland and the Baltic provinces; and Mr. Borggreve

says (Vogelf. Nordd. p. 114):—"It is a regular and characteristic summer resident near all sheets of water in wooded districts in North-eastern Germany, but is not found in open marshes during the breeding-season. In the western portions of Germany it is to be met with in small parties during passage, near water. It appears doubtful if it breeds as far west as Oldenburg, though Wiepken met with it in the middle of June on the Weser; for the present species breeds very early; and as the Sandpipers always leave their breeding-haunts directly after having nested, it is well possible that the bird he saw may have migrated thither from the east. Negelein also, who has spent much time in the forests, only *supposes* that it may breed there, which rather tends to make the question more doubtful. Besides, the Green Sandpiper betrays its presence in its breeding-haunts too clearly by following an intruder, so that even a non-ornithologist would at once have his attention attracted. I have seen the present species throughout the winter on open brooks in Westphalia." In Denmark, Mr. Benzon informs me, it occurs not uncommonly on passage late in April, and again in August and September; and it also occurs now and again in Fyen and Jutland in summer, and probably breeds there, though there is no proof of this being the case. Kjærbølling says that, without being rare, it is by no means common in Denmark, where it is met with on passage, not in large flocks, but in small parties of five or six individuals. Hage says that it has bred on Oddermosen-on-Moen; and Teilmann shot one on Vilslev Enge, near Ribe, sitting on four eggs. According to Mechlenburg it breeds here and there at Flensburg. It occurs in Holland only on passage, and is met with at the same seasons in Belgium. In France it is also a migrant, but is stated by Degland and Gerbe to be resident in the south; and they add that they have received eggs from the Basses Alpes taken from a nest in a bush overhanging a torrent. Mr. Adrien Lacroix also states that it breeds regularly throughout the French Pyrenees. It is not common in Portugal; and Colonel Irby says that in Spain it is most common in the winter months near Gibraltar, but in Andalucia is very irregular and uncertain in its movements. In a note lately sent to me he adds that he only once observed it in June near Santander, where a party of three were seen on the 20th June, 1876. According to Bailly it breeds in Savoy; but as he says that it deposits its eggs on the ground, there is probably some mistake in this statement; and though Savi writes that numbers nest in Tuscany, this statement must also be taken with extreme caution. Count Salvadori, however, speaks of it as being common and resident throughout Italy. Professor Doderlein says that it is common in Sicily, especially on passage: but I cannot but doubt the correctness of what he states as to its breeding there; for he says that many breed along the mountain-streams in the interior of the island. Mr. C. A. Wright records it as common on passage in Malta, and says that it is sometimes seen in June. It occurs throughout Southern Germany; and I was informed by the late Mr. E. Seidensacher that he has observed stragglers throughout the year in Styria, near Pletrovic and Dobricendorff, but never succeeded in finding its nest. Messrs. Danford and Harvie-Brown write respecting its occurrence in Transylvania (Ibis, 1875, p. 421) as follows:—"During our visit to Hatzeg, at the end of April, we saw a specimen of this bird at Réa; and Danford found it very common in the same locality in autumn. Herr Buda Ádám and Bieltz agree in saying that it breeds in the country, nesting among sand and stones; but Herr Buda afterwards told Danford that, though he sees the birds the whole summer, he has not actually found the nest, but feels quite sure that they must breed." In

Greece, according to Dr. Krüper, it winters, but only in small numbers, though Messrs. Elwes and Buckley speak of it (*Ibis*, 1870, p. 332) as being "the commonest Sandpiper in the marshes and rivers of Macedonia." Lord Lilford states that it is occasionally seen in June and July in Corfu and Epirus, and is common there from the beginning of September till the end of May. I have seen several specimens from Turkey, and have observed it in the spring on the Lower Danube. Professor von Nordmann speaks of it as being common in Southern Russia, the first arriving near Odessa about the end of March; and in Asia Minor it is stated by Dr. Krüper to winter in small numbers as in Greece. Canon Tristram writes that it is common in Palestine until June, long after the other Waders have left, from which one must infer that it cannot breed very far distant from that country. Mr. C. W. Wyatt met with it in the peninsula of Sinai; and Von Heuglin says that it visits North-east Africa regularly in the winter season, arriving in Egypt in August and September. He met with it not uncommonly in Abyssinia, but only singly on the coasts of the Red Sea; and he observed it in the swamps of the Abiad to 8° N. lat. It leaves in March or early in April; but occasionally a straggler is to be met with throughout the summer. Captain Shelley met with it throughout Egypt and Nubia in winter; but Mr. J. H. Gurney, jun., informs me that he did not find it nearly so common in Upper as in Lower Egypt, where it was one of the commonest species. He did not observe it at the Fayoom. Mr. Blanford found it numerous in the highlands of Abyssinia, but did not note its occurrence on the coast. It has been obtained as far south in Africa as the Cape colony. The various authors who have written on the ornithology of Algeria agree in stating it is generally distributed throughout that portion of Africa in winter. According to Favier (*fide* Colonel Irby) it is "not uncommon in winter around Tangier, frequenting the edges of lakes and the banks of rivers alone or in pairs. They depart northward during February and March, reappearing in August and September." Messrs. Shelley and Buckley found it plentiful on the Gold Coast; Monteiro observed it in Angola; and Mr. E. L. Layard states that several examples were received from Mr. Arnot, which were procured near Colesberg, and that it was also common at Zoetendals Vley, in November 1865, and at the Knysna. In Asia it is also widely distributed. De Filippi records it as occurring in Persia; and Mr. Blanford met with it near Shiraz and in Baluchistan. Dr. Jerdon says that it is one of the earliest of the tribe to arrive in India, and he has seen it in Northern India towards the end of July. It is generally solitary; and he thinks it possible that some few couples may breed in Northern India among the hills, as Colonel Irby mentions having seen them in May, June, and July. Dr. Henderson found it common throughout Yarkand; Dr. Severtzoff states that it breeds in Turkestan; I have a specimen from Burmah; and Mr. Blyth says that it occurs in Arakan and Upper Pegu. Von Middendorff says that he first saw it in the Stanowoi mountains on the 4th May, after which it was tolerably numerous; and he also found it common on the south coast of the Sea of Ochotsk. Dr. L. von Schrenck obtained it both at the headwaters and at the mouth of the Amoor, in both places in May; and Dr. Radde found it tolerably common throughout the summer in Dauria, but it was usually seen in scattered pairs. He did not see it near Lake Baikal, but adds that it is doubtless generally distributed throughout Asia. Père David speaks of it as being abundant on passage in Northern China; and Mr. Swinhoe, who records it as found throughout China and Fomosa, adds that he believes a few remain to breed. Captain Blakiston also mentions (*Ibis*, 1862, p. 330) that he shot one in Northern Japan, in September.

The present species of Sandpiper is but seldom seen on the sea-coast; for it affects inland pieces of water, even during the seasons of passage; and in the breeding-season it frequents the woodlands in places where there is water in the immediate vicinity. It prefers small ponds or quiet nooks where there is good shelter to the large morasses, or the shores of lakes, where the other species of Sandpipers are so frequently met with. When in Germany and Finland I used to meet with it in small ponds in the woodlands, or where a ditch was well shaded with alders and other bushes which grow in damp localities; and I scarcely remember to have seen it in the large open marshes which are so numerous in the latter country. It is shy and very difficult of approach; for it detects the presence of a stranger at a considerable distance, and beats a retreat long before danger threatens. If suddenly surprised, as it sometimes may be when in a densely wooded place, it starts up hurriedly and flies swiftly off, not uttering a sound until it has traversed a considerable distance; but when it can see danger from afar and takes wing in good time, it utters its clear, loud alarm-note, which resembles the syllables *dleedleedlee* uttered quickly; and it seldom or never utters it singly, like *dlee*, but always two or three times in succession. Its flight is swift and graceful, the wings not being far extended, but only so that the outer primaries form almost parallel lines with the legs and neck, which are stretched out behind and in front. It sometimes traverses a considerable distance with but few strokes of the wing; but just before it alights it hovers a little, and then the wings are extended much more than in its usual flight. Like its allies it is a migrant, arriving at its breeding-haunts in April, and leaving again for warmer climes late in August or in September; and when on passage it is never seen in large flocks like many of the Sandpipers, but in small family parties, or else singly or in pairs; and being secretive in its habits, it probably appears to be more rare than it really is. It feeds entirely on insects which are found in or near the water, larvæ of the common gnat, water-insects of various sorts, and small worms, which soon become a semifluid-like mass in its stomach. Naumann remarks that in April he has frequently found in its stomach a reddish larva about as thick as a knitting-needle, and numbers of a small thread-like white maggot intermixed with a greenish substance, but never any trace of vegetable matter.

The Green Sandpiper is very peculiar in its mode of nidification; for, contrary to the usual mode of nesting of other allied species, it deposits its eggs in old nests situated in trees, and does not nest on the ground. Mr. Hintz, who was, I believe, the first to publish a detailed account of the breeding-habits of this bird, says (J. f. O. 1862, p. 460), "already in 1834 I found the first nest that I recorded, on the 26th April, in an old nest of *Turdus musicus*. But even before that (as early as 1818) I found nests; but as I had no facilities for exchanging, I took only a few sets for my own collection, and did not take much notice of it until 1852. In that year, however, I found on the 15th May a nest with four eggs, about four days incubated, in an old Thrush's nest; on the 18th May four just fledged young were taken close to the Radue shore in a very old nest, and the eggs were lying on dry conifer-spines. In 1855, on the 6th May, three eggs, about four days incubated, were taken on a fir about 18 feet high, in an old Pigeon's or Jay's nest. In 1856, on the 24th April four eggs, on the 19th May four fresh eggs, 22nd June four eggs nearly hatched, all in old Thrush's nests. In 1857, on the 16th April three eggs, and the bird was still laying, 1st June four eggs about three days incubated, 18th June three fresh eggs, all in Thrush's nests. In 1859, one clutch with four fresh eggs, 15th May lately hatched young, 29th May three

eggs, 2nd June four fresh eggs, all in old Thrush's nests. In 1860, on 10th May four eggs three-quarters incubated. In 1861, 9th May four fresh eggs and four half-incubated eggs, one of which was almost white with only a few black spots on the larger end; on the 10th May three young and the fourth egg very nearly hatched, in an old squirrel's nest on a birch (this was the highest-situated nest I ever took, being about 30 feet from the ground; the young jumped down from the nest without hurting themselves, and hid themselves in the grass); on the 11th May four fresh eggs in an old Pigeon's nest, which was full of old conifer-spines and was built on a pine; on the 20th May two eggs almost hatched, two young were already out of the nest; on the 22nd four young in an old nest of *Lanius collurio*; on the 24th May four freshly hatched young in a broken-down *Populus tremula*. This tree had a hole at the broken place, and in the preceding year *Muscicapa luctuosa* bred there; out of this hole, which the bird had chosen for its nest, the young birds, which had been hatched scarcely half an hour previously, jumped at my approach and hid themselves in the grass. In 1862, on the 11th May, four fresh eggs in an old Thrush's nest, the same in which I found the white egg in the preceding year; on the 23rd May two eggs more than half-hatched, and, strange to say, there were no more eggs in the nest; on the 26th May four eggs half-hatched: both clutches in old Thrush's nests. All the nests I have found up to the present time were not more than three paces from the water; and I have found them as low as one foot, but usually from three to six feet high." The Rev. Herbert S. Hawkins has placed at my disposal a letter from Mr. Hintz respecting the nidification of the present species, from which I translate the following:—"The bird arrives here in pairs from the beginning to the middle of April, and selects for the purpose of nidification wooded localities close to ponds, from which it makes excursions to marshy lakes or rivers at some distance. It usually deposits its eggs in old deserted nests of the Blackbird and Missel-Thrush; but I have on one occasion taken eggs out of a nest of the latter species which had been left by the young Thrushes only six days previously. It also not unfrequently uses the same nest two years in succession. I have found its eggs in old half-ruined nests of Woodpigeons, Jays, and even in those of the squirrel, on the ground, on the moss, on old stumps with only a few leaves under the eggs, and on one occasion on the branches of an old pine tree in a place where the spines were heaped together, and once even in the hollow of an aspen tree where a Starling had previously bred, the tree having fallen and the opening of the hole being upwards. Formerly I used always to look for the nests of the Green Sandpiper low down, and usually found them from 3 to 12 feet above the ground; but of late years I have taken eggs as high up as 35 feet. The bird always nests close to ponds where even in the summer there is some little water; and only on two occasions have I found the nest as far distant from the water as 20 to 30 paces. As soon as the young are hatched they jump down to the ground. The present species breeds early, often in the middle of April, usually in May, or, if the eggs are taken, in June, the second lot of eggs being occasionally, though not often, deposited in the same nest." Borggreve states that Mr. Hintz once found seven eggs of this species in an old Thrush's nest at Neustadt Eberswald; and he surmises that two females must have laid in the same nest, which I think most probable. I may add that Mr. Booth told me that he himself once took eight Greenshank's eggs out of a nest in Sutherlandshire.

The eggs of the Green Sandpiper, like those of its allies, are pear-shaped, and, as a rule,

somewhat resemble those of the Wood-Sandpiper in character, but are larger and more sparingly spotted. Of three clutches I possess, the eggs in two are delicate greyish sea-green, sparingly marked with pale purplish grey shell-markings and dark brown surface-spots, these latter being rather more profusely collected round the larger end. The third clutch of eggs resemble some varieties of the common Sandpiper's, but are larger, and the spots are, as a rule, smaller. In size the eggs in my collection, all of which are from Pomerania, vary from  $1\frac{1}{4}$  by  $1\frac{4}{10}$  to  $1\frac{2}{4}$  by  $1\frac{6}{10}$  inch. Mr. J. H. Gurney, jun., points out to me that some Green Sandpipers appear to have a peculiar smell; Mr. Lubbock describes it (Faun. Norf. p. 74) as "a most fulsome muddy smell;" and Mr. Cordeaux says that it is a semiaromatic odour resembling musk. Colonel Irby also states that it almost always has a strong musky odour; but Mr. Gurney adds that, although he has shot many specimens, and has had them often sent to him in the flesh, he could never detect any such smell; nor do I recollect to have observed it in any of those which I have shot.

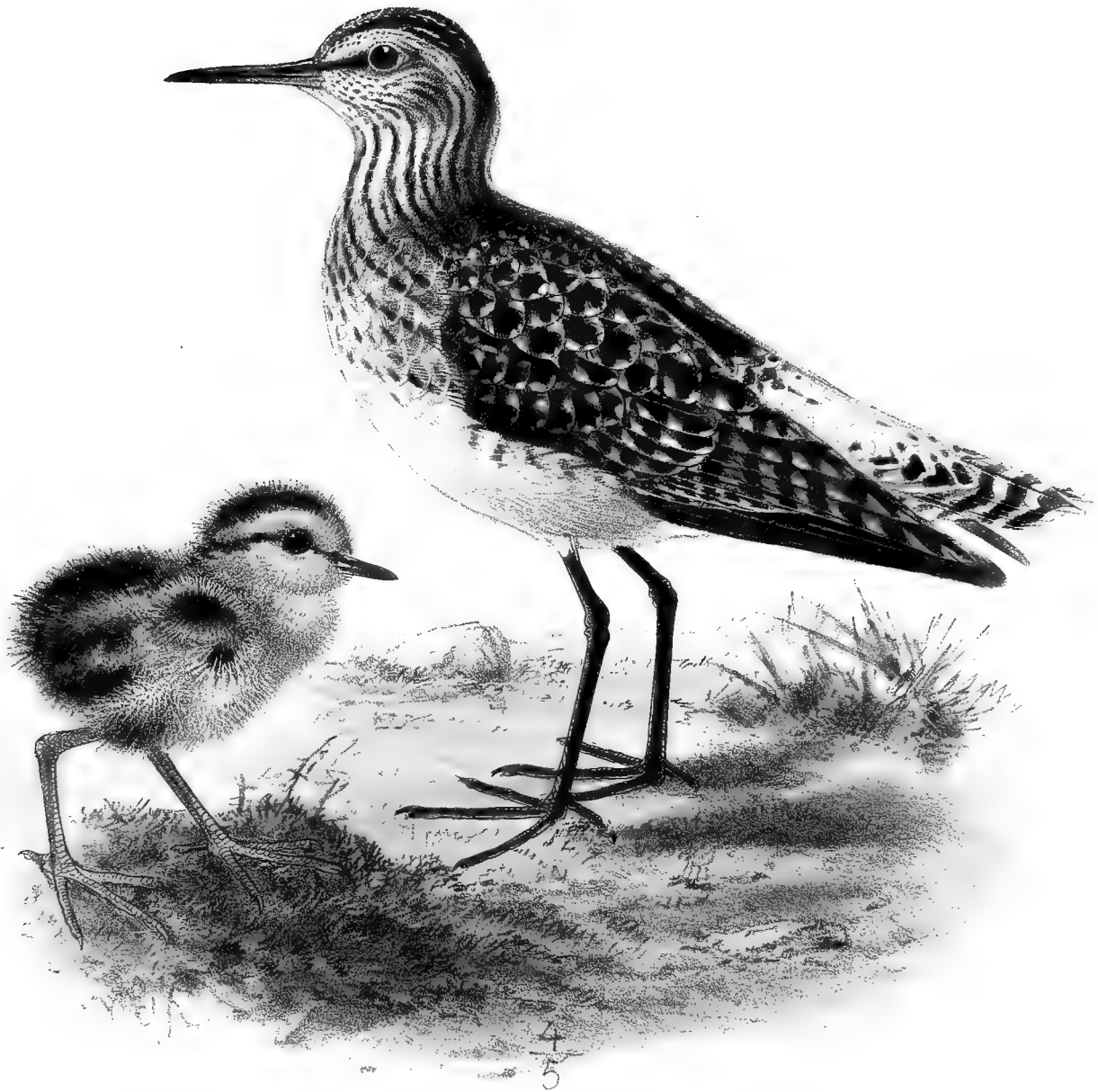
The specimens figured are an adult female and a young bird in down, and are those above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

- a.* Pavda, Ural, July 22nd, 1868 (*Sabanäeff*). *b.* ♀. Malaga, Spain, June 24th, 1871 (*H. Saunders*). *c.* Santander, Spain, June 20th 1876 (*Col. Irby*). *d.* Biskra, Algeria (*Fairmaire*). *e.* Greece (*Leadbeater*). *f.* ♀. Guiken, Asia Minor, March 27th, 1867 (*Robson*). *g.* ♂. Smyrna, August 10th, 1871 (*Krüper*). *h.* Tonghoo, Burmah, March 1866 (*Whitely*). *i.* pull. Wermland, Sweden, June 3rd, 1869. *k.* pull. Wermland, June 16th, 1873 (*Meves*).





M. S. 1895

WOOD SANDPIPER.  
*TOTANUS GLAREOLA*

## TOTANUS GLAREOLA.

(WOOD-SANDPIPER.)

- Tringa glareola*, Linn. Fauna Suecica, p. 65 (1761).  
*Tringa ocropus*,  $\beta$ . *glareola*, Linn. Syst. Nat. i. p. 250 (1766).  
*Tringa glareola*, Gmel. Syst. Nat. p. 677 (1788).  
*Trynga littorea*, Pallas, Zoogr. Rosso-As. ii. p. 195 (1811, nec Linn.).  
*Tringa grallatoris*, Mont. Orn. Dict. Suppl. App. S (1813).  
*Totanus glareola* (L.), Temm. Man. d'Orn. p. 421 (1815).  
*Totanus affinis*, Horsf. Trans. Linn. Soc. xiii. p. 191 (1822).  
*Totanus grallatoris* (Mont.), Steph. in Shaw's Gen. Zool. xii. p. 148 (1824).  
*Rhyacophilus* (*Totanus glareola*, Temm.), Kaup. Natürl. System, p. 140 (1829).  
*Totanus sylvestris*, C. L. Brehm, Vög. Deutschl. p. 638 (1831).  
*Totanus palustris*, C. L. Brehm, op. cit. p. 639 (1831).  
*Totanus kuhlii*, C. L. Brehm, op. cit. p. 641 (1831).  
*Actitis glareola* (L.), Jerdon, B. of India, ii. p. 697 (1863).  
*Totanus glareoloides*, Hodgs. fide Jerdon, ut suprâ (1863).

*Chevalier sylvain*, French; *Piro-piro boschereccio*, Italian; *Pespus-tal-bahar*, Maltese; *Bruch-Wasserläufer*, *Wald-Wasserläufer*, German; *Boschruiter*, Dutch; *Tinksmed-Klire*, *Kjær-sneppe*, Danish; *Grönbenet Sneppe*, Norwegian; *Kärrsnäppa*, *Grönbentsnäppa*, Swedish; *Liro*, *Suovikla*, Finnish; *Bolotney-kulik*, Russian.

*Figuræ notabiles.*

Werner, Atlas, *Gralles*, pl. 22; Kjærb. Orn. Dan. taf. 36. fig. 4; Frisch, Vög. Deutschl. taf. 237; Fritsch, Vög. Eur. taf. 38. fig. 4; Naumann, Vög. Deutschl. taf. 198; Sundevall, Svensk. Fogl. pl. 41. fig. 2; Gould, B. of Eur. pl. 315. fig. 2; id. B. of G. Brit. iv. pl. 57; Schlegel, Vog. Nederl. pl. 246; Roux, Orn. Prov. pl. 297.

♂ *ad. ptil. æst.* pileo, nuchâ et collo postico nigro-fuscis albo striatis: striâ superciliari albâ, et striâ fuscâ a basi rostri ad oculum ductâ: dorsi plumis medio nigro-fuscis vix viridi nitentibus, lateraliter albo bimaculatis: supracaudalibus albis: rectricibus centralibus dorso concoloribus sed fusco-griseo et albo fasciatis, reliquis albis fusco fasciolatis: remigibus nigro-fuscis, remige extimo rhachi albâ: capitis et colli lateribus albis fusco striatis, mento albo: subtus albus, pectore et hypochondriis fusco striatis et maculatis, illo cinereo lavato: rostro nigro, basi virescente: pedibus olivaceo-ochraceis: iride fuscâ.

*Ptil. hiem.* plumis in corpore suprâ latiùs albido marginatis, pileo magis eodem colore striato, pectore et hypochondriis minus fusco notatis et fusco-cinereo lavatis.

*Adult Male in summer* (Uleåborg, Finland, 30th May). Crown, nape, and hind neck blackish brown slightly striped with white; a broad white streak over the eye and the ear-coverts, and a blackish brown streak

from the base of the upper mandible to the eye; upper parts blackish brown with greenish sheen, the feathers margined with white and pale greyish buff spots, giving the upper parts a slightly spotted appearance; quills blackish brown, the shaft of the first primary white; upper tail-coverts white; central rectrices rather elongated, coloured like the back, but barred with buffy grey and white; remaining rectrices white, barred with blackish brown; chin white; sides of the head, neck, and breast washed with buffy grey and striped with blackish brown; breast and flanks more broadly striped, rest of the underparts white; under tail-coverts and axillaries white, slightly barred with blackish brown; under wing-coverts dark grey, broadly edged with white; bill black, the under mandible olive-greenish at the base; iris dark brown; legs greenish ochreous. Total length about 7·5 inches, culmen 1·25, wing 4·9, tail 2·15, tarsus 1·45, bare portion of tibia 0·85.

*Adult Female.* Resembles the male.

*Adult in winter* (Java). Does not differ much from the bird above described; the white margins to the feathers on the upper parts are broader, especially on the head and neck, the upper parts are rather paler, the throat and neck less striped with dark brown, but more washed with buffy grey, and the flanks are much less marked with dark brown.

*Young in down* (Boel, Jutland). A streak from the forehead and the entire centre and hind crown blackish brown, and a narrow blackish streak from the base of the upper mandible through the eye to the hind neck, which is also blackish brown, rest of the head warm buff; upper parts warm rufous buff blotched with blackish brown; underparts buffy white, the sides of the neck washed with warm buff.

In this stage of plumage *Totanus glareola* differs from *Tot. ochropus* in having the upper parts more rufous, the underparts more buff, these latter being white in *Totanus ochropus*, and in the present species the centre of the crown is covered by one large blackish brown patch, forming a sort of cap, whereas in *Totanus ochropus* the crown is streaked with black, these streaks becoming confluent only on the nape.

THE Wood-Sandpiper is found throughout the entire Palæarctic Region, ranging in winter southward to South Africa and the Philippine Islands.

In Great Britain it occurs here and there as a somewhat rare straggler during passage; but, so far as I can ascertain, there is but one undoubted instance on record of it having remained to breed. In some parts of the south coast it is perhaps more frequently met with than elsewhere. Mr. Mansel-Pleydell says that it is very rare in Dorsetshire; but Mr. Cecil Smith informs me that it occurs not unfrequently in Devonshire, but that he only knows of one specimen obtained in Somersetshire, killed near Taunton on the 9th May, 1870. I have seen it on several occasions in Kent and Sussex; and it visits the eastern counties now and again. Mr. Stevenson, who gives full particulars respecting those which have been recorded as obtained in Norfolk during the last few years, says (B. of Norf. ii. p. 226) that, "as compared with the Green Sandpiper, it is a rare visitant to our coast, appearing only occasionally, and at uncertain intervals, on its migratory course in spring and autumn. At such times also, in company with other migratory Waders, it is usually met with in close vicinity to the coast, and a very large proportion of the specimens procured in Norfolk have been killed on Breydon." Mr. Cordeaux has never observed it in the Humber District; but Mr. John Hancock says (Birds of North. & Durh. p. 121), it is "a rare spring and autumn migrant, arriving early in May, and leaving in August and September. In Selby's catalogue three captures are recorded. The first at Ellingham, in the autumn of 1828;

this bird was in the collection of Twizell. The second bird was taken at Prestwich Car, in 1830, and is now in the Newcastle Museum; and the third was in the possession of the late Mr. Edward Blackhouse, and was shot at the Whit-Mare Pool, in the county of Durham. In my journal there are nine entries of the occurrence of this species; of these one was at Gosforth, all the rest at Prestwich Car. At the latter place I took its nest and eggs on the 3rd of June, 1853, when my companion shot the adult male, and thus the eggs were fully authenticated. I believe this is the only time the nest has been taken in England. On the 19th of June, 1845, a mature bird was shot by the late Mr. Richard Reay, at Prestwich Car. There can be little doubt that this was also breeding there. My friend Mr. Thomas Atthey likewise killed three examples at the same place, on the 4th August, 1832, two of which he kindly presented to me, and they now form part of my series of this species. Recently another specimen was shot at Newcastle Town Moor, by Robert Duncan, jun., on the 1st of September, 1873. This bird was in its first plumage."

Mr. Robert Gray only records one instance of its occurrence on the west coast of Scotland, a specimen in his possession having been shot on the Renfrewshire banks of the Clyde, opposite Bowling, in the autumn of 1853; but, he adds, it has occurred several times in the eastern counties; and he cites one occurrence in Caithness and two in Aberdeenshire. One, Dr. J. A. Smith informed him, was shot near the village of Heriot, Mid-Lothian, on the 14th August, 1856; and, as stated by Mr. A. G. More (*Ibis*, 1865, p. 435), Mr. Bond had some eggs, taken in Elginshire, which he considers to be those of the present species. In Ireland the present species is not known with certainty to occur. Mr. H. C. Müller says that it has occurred on the Færoes, and in Scandinavia it is common and generally distributed throughout the country. Mr. R. Collett says that it breeds commonly in the interior of Norway, chiefly from the arctic circle up to the Russian frontier, but it is numerous southwards through the Trondhjem stift, and breeds in colonies in the southern portion, especially in the birch-region on the fells, as, for instance, on the Dovre and Langfjeldene and their branch ranges. A few nest in the lowlands down to the Christianiafjord, where it is generally distributed and common on passage. On the west coast, north of Jæderen, it is as rare as the Green Sandpiper.

Nilsson writes that it is common throughout Sweden from Skåne northwards, arriving from the south in April and leaving in September; and Meves informs me that it breeds in Småland. In Finland it is, according to Dr. Palmén, one of the commonest Waders, and breeds numerous in the northern districts, being generally distributed during the breeding-season throughout the interior of Finnish Lapland, in Enare and Utsjoki, Muonioniska and Enontekis. I found it common near Uleåborg and Torneå and all along the coast; and, according to Palmén, it breeds as far south as Helsingfors. Messrs. Seeböhm and Harvie-Brown met with it on the Petchora river, in Northern Russia. The first, they write (*Ibis*, 1876, p. 291), "were shot by us at Ust Zylma on the 26th May. They were frequenting the pools in the middle of the town, and were exceedingly tame, allowing us to approach within a few yards of them. They were very common at Habariki, and we shot specimens, which had perched on the tops of the high dead larches, quite seventy feet from the ground. Northward they became scarcer; and between Abrámoff and Alexievka we lost sight of them altogether. Later, however, on the tundra, we found a few pairs, and obtained the young at Vassilkova. We did not see any further north than Stana-voialachta." It is said to be numerous in the Archangel Government; and Mr. Sabanäeff says

that it breeds not unfrequently in the Jaroslaf and Moscow Governments. In the Ural he found it somewhat common, during the summer, on the south-eastern slope, and very numerous on passage. Numbers breed in Pavda, where it is one of the most numerous of the Waders. It is found in Poland and the Baltic Provinces; and Borggreve states that it is found during the summer in many, but not all, of the marshes in Eastern and Western Germany. He found it breeding in Mittel-Oderbruch and near the Greifswald, in Torfstichen; but it was wanting on the plains of Pomerania. According to Von Negelein, it breeds on the moors of East Friesland; and it is stated to nest in Anhalt, Mecklenburg, and Lower Pomerania (Hinter-Pommern). Boeck records it from Prussia; but Gloger does not include it as breeding in Silesia, and it is doubtful if it breeds in Northern Münsterland. In the western portion of North Germany it is certainly less numerous on passage than the Green Sandpiper. To this I may add that, according to Herr E. von Homeyer (*J. f. O.* 1872, p. 338), Borggreve is wrong in stating that it is not found on the plains of Pomerania, as, excepting the common Sandpiper, it is the most numerous species found there during the breeding-season. Professor Kjærbølling states that it breeds not uncommonly in Denmark, as for instance near Tarum, Skjern, and Hastrup, at Sæby, Mols, between Jerup and Aalbæk, in Vendsyssel, and in Seeland. It arrives in Denmark in April, and leaves in September. It breeds not uncommonly in Holland; but Baron von Droste Hülshoff says that it occurs on the island of Borkum only on passage, in spring, between the end of April and the 14th of May, and in the autumn, sometimes as early as the end of June. In Belgium it is said to be rare and of accidental occurrence in the marshes of the Campine, and visits the Moselle in autumn; but in France it occurs annually during passage in the northern and southern provinces, being more numerous in the latter in the spring than in the autumn. It is entered in the list of birds found in Portugal with a query: but it occurs in Spain; and Colonel Irby says that he observed it frequently on passage near Gibraltar, from the 9th of March to the beginning of May. According to M. Adrien Lacroix it is accidental on passage in the French Pyrenees in September and October; but in Hérault and the Pyrénées Orientales it remains regularly to breed. It occurs in Savoy on passage; and in Italy, according to Salvadori, it arrives in great numbers in April, remains for a short time, and passes on; and he does not believe that it nests in any part of the country. In the autumn it is again numerous. In Sicily and Sardinia it is a common visitant during passage, and occasionally some remain over winter. Mr. A. B. Brooke observed a flock of fifteen or twenty of these Sandpipers about a small lake near S. Gavino, in Sardinia, in the winter and up to the end of April, when they disappeared; and he does not believe that any remain to breed in that island. In Malta, Mr. C. A. Wright says (*Ibis*, 1864, p. 146), "this is one of the commonest and earliest Sandpipers in March, and continues to be seen throughout April and part of May, repassing in July and September." Dr. Krüper says it winters in Greece, leaving late in April or early in May. Erhard observed it in winter in the Cyclades; and Lord Lilford found it in Corfu not uncommon in March, April, and early in May. In Southern Germany it is found in most parts during passage; and Dr. Anton Fritsch says (*J. f. O.* 1871, p. 388) that it probably breeds in Bohemia, as Palliardi states that it is found there at all seasons; and he believes that he also saw it near Frauenberg. Messrs. Danford and Harvie-Brown say that it is not rare on passage in Transylvania, and it occurs in the countries bordering the Danube. In Southern Russia it is common during the summer, nesting abun-

dantly, Professor Nordmann says, in Bessarabia; and Mr. H. Goebel says (J. f. O. 1871, p. 140) that it breeds in the Uman district. In Asia Minor and Palestine it is met with on passage and in winter; and in Africa it ranges as far south as Natal. Von Heuglin says that it is a winter visitant to North-east Africa, and is met with less frequently on the coast than near fresh water. It wanders southwards to Abyssinia, Sennaar, Kordofan, and the Bahr-el-Abiad; and in Habesch is found at an altitude of 10,000 feet in marshy places and on the banks of streams. A few, he adds, remain over summer on the Nile. Captain Shelley writes (B. of Egypt, p. 259):—"In its visits it appears to be somewhat irregular; for although in 1870 and 1871 I found it one of the most abundant of the wading birds in Lower Egypt and the Fayoom, and also shot several in Nubia, in 1868 I did not fall in with it once, to my knowledge, above Cairo; and Mr. E. C. Taylor also found it rare during his visits." In Algeria it is said to be less common than the Green Sandpiper, but is by no means rare. Mr. Taczanowski found it common at Fezzara; and Mr. J. H. Gurney, jun., remarks (Ibis, 1871, p. 299) that it was commoner south of the Tell, and that he found it tamer than the Green Sandpiper. Mr. C. F. Tyrwhitt-Drake met with it near Laraiche, in Morocco; and Colonel Irby says (Orn. Str. Gibr. p. 167) that there were plenty to be seen towards the end of April at the lakes of Ras Dowra and other swamps in that country. It has been recorded from various parts of West and South Africa—Senegambia, the Gold Coast, Gaboon, Casamanze, Benguela, &c. Captain Shelley found it common at Durban. Mr. Andersson says (B. of Damara Land, p. 303), it "is not a common bird in Damara and Great Namaqua Land; but now and then small flocks are to be met with at inland springs, streams, and marshes; in some seasons it was frequently obtained at Objimbinque, and I also found it not uncommon in Ondonga;" and he adds that he believes it sometimes remains there to breed. Mr. E. L. Layard, remarking that Mr. Ayres found it at Natal, says that he never met with it except about Zoetendals Vley, where he observed it in November 1865. I possess a specimen from the Cape colony sent by Mr. Layard during the latter part of his sojourn at the Cape. Mr. J. H. Gurney has received it from Natal; and Dr. Kirk says (Ibis, 1864, p. 332) that it was numerous in the marshes and on the sandbanks of the river Shiré, in the Zambesi country.

In Asia it is found as far east as Japan. Messrs. Blanford and St. John met with it in South-eastern Persia and Baluchistan; and Dr. Severtzoff states that it breeds in Turkestan. According to Dr. Jerdon (B. of India, ii. p. 698) the present species is very common throughout all India in the cold season, is sometimes seen alone, frequently in very small parties by the grassy sides of tanks and in paddy-fields or damp meadows, being, as Colonel Irby correctly observes, more a Marsh-Sandpiper than the other two species. Mr. Holdsworth says that in Ceylon he found it exceedingly abundant in all wet places, and has counted as many as twenty round a small pool at Aripo during the rains. Mr. Wardlaw-Ramsay also met with it in Burmah.

It is found throughout Siberia; and Kittlitz records it from Kamtschatka. Von Middendorff says that it arrived on the Boganida (70° N. lat.) on the 29th May (O. S.), and breeds there commonly. On the 12th May he observed it in marshy places on the west slope of the Stanowoi Mountains, but did not observe it again until he reached Udskoj Ostrog, where, as also on the sea-coast and on the large Schantár Island, he met with it. Von Schrenck met with it all along the Amoor, though less numerous than the Greenshank; and Dr. G. Radde obtained specimens at the Tarei-nor and on the eastern slope of the Southern Apfelgebirge. Messrs. Dybowski and

Parvex met with it during passage in Dauria; Mr. Swinhoe records it as common in China and Formosa in the early winter and spring; and it has been recorded from Japan, where Mr. Whitely obtained one at Hakodadi on the 4th November, 1864, from a native birdcatcher. Southward it ranges to the Philippines. Lord Tweeddale records it from Luzon, and Kittlitz from Manilla. I possess a specimen from Java; and it has been recorded from Timor, Borneo, Celebes, and Amboina.

In habits the present species is far more of an inland marsh-bird than most of its allies. I first made its acquaintance years ago when collecting on the coasts of Kent and Sussex, and obtained several near Rye Harbour. I found them singly in the gravel-pits where water had collected, and near small ponds away from the sea-coast, and never, as far as I can recollect, on the coast itself. They were very shy, and we could only get a snap shot at one now and then by creeping carefully up to where we knew it would be found. When travelling up the coast of Finland in the spring of the year I used frequently to see Wood-Sandpipers at the small puddles by the road-side; and as they were not very shy, I shot several out of my carriage; and in some parts of the country it appeared to be common. I generally saw two or three together, seldom more; and they did not appear to consort with other species of Sandpipers; but in the autumn they are said to collect together in small flocks of about a dozen individuals, and not unfrequently of many more. In its general habits it is active and sprightly, restless in its movements, and rather shy than otherwise. It reminded me much of the Redshank in its general habits, but is much less of a shore-bird than that species. On the wing it is exceedingly swift; and when it observes any one approach, it will remain quite still until it takes wing, when it darts off, flying in a somewhat crooked line with incredible swiftness, usually uttering its clear loud whistle, and seldom alighting until it has traversed a considerable distance. Its call-note is an exceedingly clear, loud whistle, easily distinguishable from that of any other of the Sandpipers; but, besides this note, the male utters during the pairing-season a succession of notes, forming a sort of pairing-song, resembling the syllables *teeleedl*, *teeleedl*, *teeleedl*, uttered several times in succession in a very high tone. This song is uttered whilst the bird is on the wing, performing various peculiar aerial evolutions at a considerable altitude. Mr. Hancock says (*l. c.*) that its flight "is peculiar when the bird is disturbed. It rises to a considerable height, moving rapidly in wide circles, and occasionally rising and descending with extended tremulous wings, and making a noise similar to that produced by the Snipe, but shriller."

Like its allies it feeds on small worms, aquatic insects and their larvæ, and probably also small mollusks. It appears to search after food generally in a marshy locality where the water is not clear and the soil is muddy, and not in sandy or pebbly places.

For the purpose of nidification it selects large open marshy districts where there are neither trees nor bushes, but where the soil is covered with grass and short aquatic herbage, but not where the sedge or rushes are dense and high; and it appears to be partial to localities where cattle are turned out to graze. The nest is placed on the ground, frequently in a place difficult of access, and generally on a small mound or patch rather higher than the surrounding ground, and hence dryer, but not, so far as I know, in a perfectly dry place away from the water. The nest is a mere depression amongst the herbage, scantily lined with a few grass-bents or dry leaves; and the eggs, four in number, are placed with the small ends pointing towards the centre. The eggs:

vary considerably in markings and coloration, but are nearest in appearance to those of the Green Sandpiper, though less in size and rather more elongated in shape. I possess a series of nearly three dozen from Holland, Denmark, and North Germany, which vary in ground-colour from greenish stone-grey to ochreous stone-colour, and are marked with deep reddish brown or dark brown surface-spots and blotches, and purplish grey shell-markings; some have tolerably large blotches scattered over the surface of the shell; others are more closely marked with smaller spots; and one or two are very closely spotted with dot-like markings intermixed with a few larger spots, most being rather more profusely spotted at the larger end. In size they vary from  $1\frac{1}{40}$  by  $1\frac{2}{40}$  and  $1\frac{1}{40}$  by 1 inch to  $1\frac{2}{40}$  by  $1\frac{4}{40}$  inch.

The specimens figured are the adult bird in full summer dress and the young bird in down above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

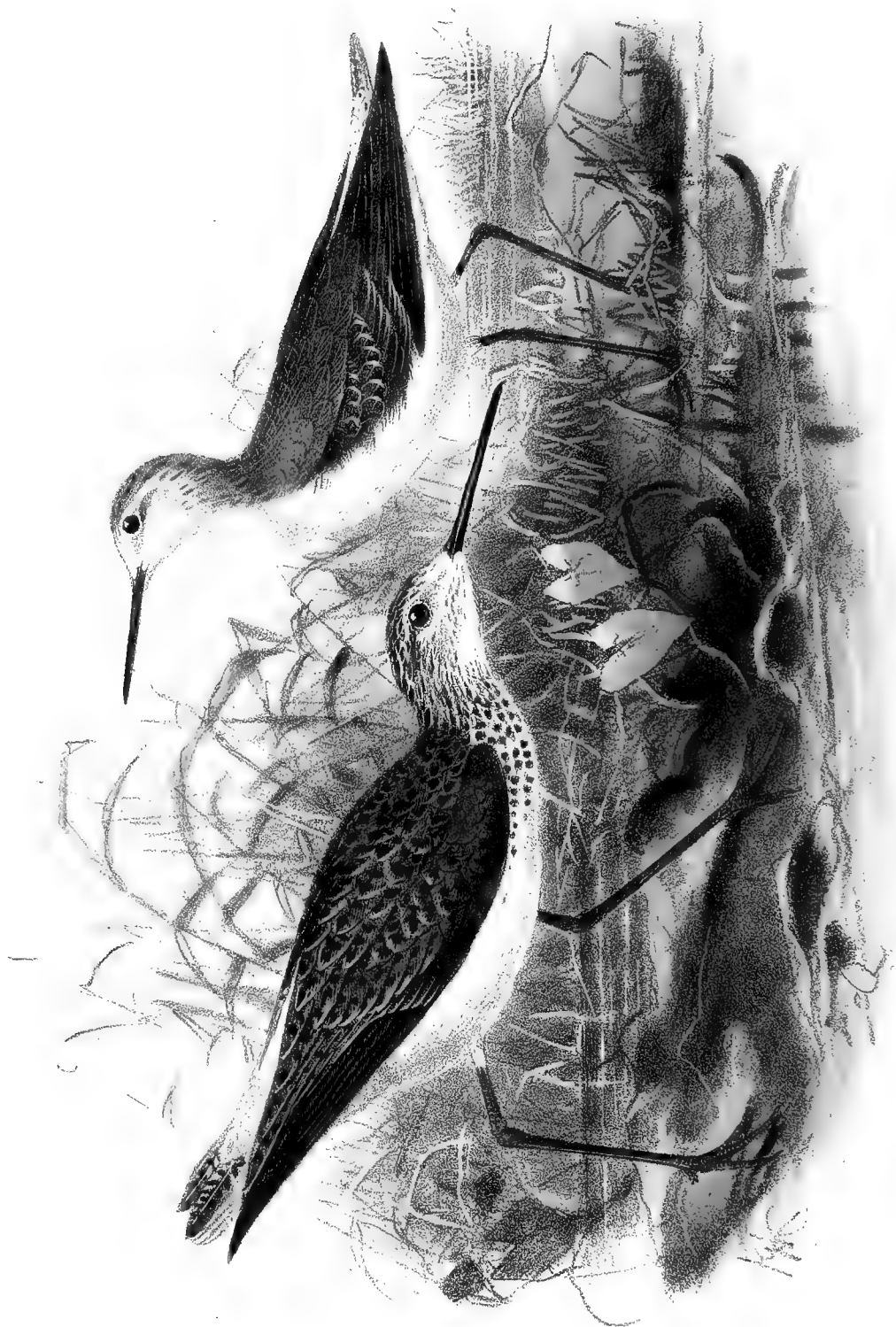
- a.* Copenhagen, 1870. *b, c, d, pulli.* Boel, Jutland, 1867 (*A. Benzon*). *e, ♂.* Patasniemi, Uleåborg, Finland, May 30th, 1861 (*H. E. D.*). *f, ♂.* Karinkanda, Finland, May 28th, 1861 (*H. E. D.*). *g, ♀.* Ijma, near Archangel, July 3rd, 1872 (*Piottuch*). *h, ♂, i, ♀.* Mezen, N. Russia, June 17th, 1873 (*Piottuch*). *k.* Batna, N. Africa. *l, ♂.* Laghouat, Algeria, March 3rd, 1870 (*J. H. Gurney, jun.*). *m.* S. Africa (*E. L. Layard*). *n.* Cape of Good Hope (*Layard*). *o, p, ♀.* India (*Marshall*). *r, ♂, s, ♀.* Secunderabad, India, October 25th, 1865. *t, ♂, u, ♀.* Secunderabad, November 13th, 1869 (*G. M. Slaughter*). *v.* Java (*Boucard*).

*E Mus. Howard Saunders.*

- a, ♂.* Valencia, April 13th. *b, ♂.* Valencia, November 28th (*R. Martin*). *c, d, ♀.* Malaga, August 4th. *e.* India. *f.* Java (coll. *Harting*). *g.* Salini, Malta, May 21st (*C. A. Wright*).







TOTANUS STAGNATILIS.  
VI

## TOTANUS STAGNATILIS.

(MARSH SANDPIPER.)

*Totanus stagnatilis*, Bechst. Orn. Taschenb. p. 292 (1802).*Trynnga guinetta*, Pall. Zoogr. Rosso-Asiat. ii. p. 195 (1811).*Totanus tenuirostris*, Horsf. Trans. Linn. Soc. xiii. p. 192 (1822).*Piro-Piro gambe lunghe*, Italian; *Chevalier stagnatile*, French; *Teich-Wasserläufer*, German; *Caballero chorlito*, Spanish; *Ceu-ceua sekonda*, Maltese.*T. griseuscenti-brunneus*, plumis dorsalibus ad basin nigris: subtus albus, genis et pectore superiore brunneo longitudinaliter striato: fronte albescente.

*Adult Male, in summer plumage.* Above greyish brown, very slightly tinged with buff, with black mottlings and streaks distributed everywhere, except on the wing-coverts, which are almost devoid of these mottlings, some of the greater coverts externally edged and tipped with white; quills dark brown, secondaries rather paler, externally edged with white, the innermost and longest barred exactly in the same way as the scapulars: lower part of the back and rump pure white; upper tail-coverts very long, white, spotted and barred with blackish brown; centre tail-feathers greyish brown with dark cross-barrings, all the other tail-feathers for the most part white, the outermost almost entirely so with the exception of a slight edging on the outer web; the other feathers becoming more and more marked with brown as they approach the centre of the tail; cheeks, ear-coverts, and upper part of the breast white, each feather with a dark broad mark down the centre, producing a minutely spotted appearance; throat and the rest of the under surface of the body pure white; axillary plumes white. Total length 9·0 inches, culmen 1·7, wing 5·3, tail 2·5, tarsus 2·0.

*Winter plumage.* Grey on the upper surface, somewhat specked with white, especially on the wing-coverts, which are for the most part dark blackish grey; under surface pure white.

THE "Marsh Sandpiper," or, as Dr. Jerdon very aptly calls it, the "Little Greenshanks," is only a summer visitant to Europe, and, excepting in the eastern and south-eastern portions, is only a straggler. In the British Islands it has not yet occurred; nor, as far as we can learn, has it been met with in any part of Scandinavia. Degland and Gerbe say it is occasionally found during migration in the north and some other parts of France, having been killed at Dunquerque, St. Omer, Abbeville, in the Department of the Aube, and in the south of France. Jaubert and Lapommeraye state that it is found in the last-named locality in small numbers, more generally in spring than autumn, and has been met with several times in the marshes of Hyères and Fréjus in the early part of June. M. Besson, of Hyères, believes that it breeds near that town. In the Camargue, according to Baron J. W. von Müller, it occurs rarely, and is said in exceptional cases to nest there; he procured a few late in April. Bailly says that in Savoy it is the rarest Sandpiper, only appearing at distant intervals. Count Salvadori has written us a note to the effect that it is "a rare bird in Italy, and he has only met with it near Pisa. Its passage is of

only a few days' duration." In Spain Vidal notices it as a rare bird, only during the spring migration. Dr. Salvadori says that it occurs in Sardinia in the spring, probably on its way northward to breed. It is rare in Tyrol in the spring, according to Luigi Althammer; and Savi records it as arriving in Italy in April as a migrant. Malherbe, again, considers it rare in Sicily, but says it is seen every year in the month of April, when individuals are found frequenting the lakes of Phare, near Messina. In Malta, Mr. C. A. Wright says, it appears annually in spring and autumn, but is not generally very common. Loche says it is only found in Algeria during migration. Naumann states that in Germany it is only an occasional visitant, and is rare, but has been killed several times in Austria, in Upper Silesia, in Würtemberg, on the Maine and in Thuringia. Pastor Boeck has obtained it in Prussia; and Gaetke has procured a specimen in Heligoland, which appears to be the most northern point in Europe at which the Marsh Sandpiper has yet been observed. Mr. Robson has sent us some nice specimens from Turkey, in both summer and winter dress. Lord Lilford, whose note we give below, found it abundant in Corfu in March, April, and the early part of May. Lindermayer says that it comes into Greece in large numbers during the equinoctial gales, remains on the marshy meadows until the middle of May, and then goes further north; it does not breed there. "Von der Mühle," he continues, "considers it one of the rarest birds in Greece; but I have had opportunities of observing numerous flocks at Phalereus, near Athens, and killed several specimens in one forenoon. On the island it is only a bird of passage, and I have never seen it in the autumn." A. von Nordmann, whose notes we give below, found it common in South Russia, where, he believes, it breeds; and Dresser, when in Hungary and on the Lower Danube, saw several specimens procured there, and has eggs in his collection from that locality. Pallas met with it in Russia and Lower Siberia; and Radde says:—"This bird appeared early in May on the Tarei-Nor, where I shot several females, the plumage of which differs not at all from the summer plumage of the European bird. These birds were in full summer plumage. The Siberian bird appears to be stouter-built than the European one."

Middendorff also shot "a single specimen on the 6th of July on the coast of the sea of Ochotsk." In India, Blyth says, it is very common; and Dr. Jerdon writes as follows:—

"This pretty little Sandpiper is less generally spread perhaps than any of the preceding species, but is now and then met with in large numbers. It frequents young rice-fields and open marshy spots, but is also seen on the bare edges of tanks. I saw it in large numbers on the banks of the Trichoor Lake, in South Malabar, and have obtained it occasionally in various parts of the country."

Major Irby states that it is very common in Oudh and Kumaon during the cold season. Mr. Swinhoe says it is rare on the Chinese coast, and he has procured a specimen in Formosa. Dr. O. Finsch kindly informs us that the Bremen Museum possesses an example from Java; while specimens are in the Leyden Museum from Borneo, and Mr. Wallace shot it in Gilolo. It also goes as far south as Australia, as Mr. Gould states that he "shot a specimen on the banks of the Lower Mokai on the 16th of December, 1839."

Following the range of the Marsh Sandpiper from Europe to Africa, we are informed by Dr. Tristram that it is found in Palestine; and in Egypt and Nubia Captain Shelley and Mr. E. C. Taylor have observed it. Mr. Jesse, during the recent Abyssinian Expedition, shot a

specimen at Zoulla, on the 13th of March; and Von Heuglin says it is found singly all over north-eastern Africa, Kordofan, and Abyssinia; he procured one as late as the end of April at Galabat. Mr. Ayres has obtained the Marsh Sandpiper at Natal; and Mr. Layard has recently brought home with him a specimen from the Cape Colony.

The late Mr. Andersson forwarded many specimens from Damaraland, and we are indebted to Mr. J. H. Gurney for the following extract from the MS. in his possession:—

“Not very common; frequents small streamlets and freshwater springs. I have frequently shot them at Otjimbinque, Damaraland.”

Mr. Ayres writes respecting its occurrence in Natal as follows:—

“The only specimens I have seen of these graceful birds have been at the edges of small pools on the roads some ten or twelve miles from the coast. If disturbed they most frequently take a large circle and return to the same pool, just as a Snipe would.”

On the west coast of Africa, Dr. Hartlaub records its occurrence in Ashantee and the Gambia.

From the list of localities above given, it is tolerably clear that the home of the present species is not, as Mr. Bree states, in the north of Europe (where the bird never occurs), but its breeding-haunts appear to be the countries of South-eastern Europe and Southern Siberia; for we do not consider the supposition of its nesting in the south of France to be sufficiently well authenticated. Naumann and others, moreover, erroneously state that it is found in America; but probably in every instance *T. flavipes* has been mistaken for it. In the course of its autumn migration it visits India; and probably the eastern line of passage extends through the Malay archipelago as far as Australia, and its western line to the south of Africa. It is, most likely, on its return to Europe in the spring that specimens are captured on the west coast of Africa, while on the way to their breeding-localities; at this time, also, they occur along the countries of the Mediterranean.

In its general appearance the present bird bears a resemblance to the Greenshanks (*Totanus glottis*), but is a much more slender-built bird, and is exceptionally long-legged. Respecting its habits in different parts of Europe, we give the following notes.

Naumann writes as follows:—

“Now and then it is also found on the rivers; but we have only observed it by standing water, which is also confirmed by other observers. Thus the flat shores of lakes and large ponds are the places where, during migration, it is sometimes to be found.

“An old birdcatcher from the salt lake of Mannsfeld knew it well, but said it was a very rare bird; he described it minutely to my father, and also sent in the only bird of this species he had procured for years. . . .

“All its movements are neat and sprightly, and may thus be called pretty. Its walk, as also its flight, is quick, the latter almost Swallow-like. On the wing its movements resemble those of other Sandpipers; and like them it only extends its wings full out and somewhat downwards from the body when it progresses a short distance, sailing, without closing the wings, horizontally through the air (as it does, for instance, when it utters its call-note during the breeding-season), and quite differently from when it shoots down from the air in a slanting direction, during which it does not flap the wings, but still keeps them closer to the body than in its usual flight, when it flaps them often and strongly. When in a cheerful mood during the breeding-

season, and dropping easily down, it often holds the wings straight up for some seconds, and even when standing, thus showing the white under surface before closing them.

“As its general habits resemble those of the Greenshank, so is its note very similar to that of this bird; and it must also for that reason be placed close to it.

“It is supposed that it breeds on the Neusiedler Lake, and also in Upper Silesia, but without proof; we can, however, state with more certainty that it occasionally breeds here in Central Germany. As before stated, we once found in a small pond, half an hour’s walk from the Elbe, a pair which seemed to have paired, and showed all signs of intending to complete their nesting-arrangements there.”

Prof. von Nordmann writes in Demidoff’s ‘Voyage’ as follows:—

“This bird, which belongs more particularly to Eastern Europe and Siberia, and is found but rarely on the western side of the continent, is common, particularly in the spring, in the marshes of the Black Sea. It arrives here in April; the flocks of this Sandpiper are always very numerous, and spread all over New Russia, and many are killed for sale in the Odessa market. It is probable that it nests with us; for I know for certain that it is found in the middle of May in Bessarabia and in the Province of Cherson. . . .

“In form and movements this bird exhibits much elegance. On its arrival in spring it shows little fear; and if one surprises several individuals on the edge of the water, and does not hunt them down too eagerly, they take to the water, keeping close together, and save themselves by swimming, rather than take to wing.

“The Marsh Sandpiper is as good a swimmer as the different Phalaropes, to which in its habits and many respects it bears much resemblance, apart from the form of the beak, which is long and very slender. The flesh of this bird is exquisitely delicate. In spring the whole body is covered with close fat, which can easily be detached from the flesh, and in plucking them great caution must be used.”

Lord Lilford (Ibis, 1860, p. 344) says it is “abundant in March, April, and the early part of May, on the race-course of Corfu. The habits of this species closely resemble those of the Green Sandpiper (*Totanus ochropus*); but it is less shy, and not so clamorous. I have had excellent opportunities of observing closely the habits of this and many other allied species on the race-course, having sometimes seen, within a few yards of the spot on which I lay hidden, *Totanus glottis*, *T. stagnatilis*, *T. glareola*, *T. ochropus*, *Himantopus melanopterus*, *Tringa minuta*, *Numenius phaeopus*, and *Glareola pratincola*.”

Captain G. E. Shelley kindly sends us the following note respecting its occurrence in Egypt and Nubia:—

“Moderately abundant both in Egypt and Nubia. They are distinguishable from *Totanus glottis* at a considerable distance, from their more slender form as well as from their smaller size. I only once met with a pair at the same pool, on the 28th April, but have on several occasions found them in company with *Totanus glareola*. In 1868 I met with them only on one occasion.”

Mr. C. A. Wright writes from Malta that it “appears annually in spring and autumn, but is not generally very common. Unlike most of its congeners it is very tame, and easily approached. I have known it to crouch, as the Stints will sometimes do, and allow a person to walk close past it without taking flight.”

For the following note we are indebted to Mr. Thomas Robson, of Ortakeny:—

“The Marsh Sandpiper is not uncommon in Turkey, Asia Minor, and South-eastern Europe. Many specimens are shot for food during the autumn migration. They are found on the margins of fresh- and salt-water rivers and seas, where muddy marshes trend to the water’s edge. They also wade in shallow waters inland, seeking food; they rest within the edges of marshes with muddy bottoms, on one leg; and when disturbed they hop out and rise from one leg. The adult birds in summer plumage are much more spotted than younger specimens, especially on the shoulders.”

Respecting the breeding-habits of this species but little is on record. As above quoted, Naumann considers that it occasionally breeds in Central Germany, but is unable to give any authentic instance. That it breeds in the vast marsh country of Hungary is certain. Dr. Baldamus (Naumannia, 1852, p. 82) found it there in the middle of June, and states that a friend of his had taken the nest there; and Mr. Johann von Frivaldsky, of the Pesth Museum, assured Dresser that it breeds, even not rarely, in some parts of Hungary, and also showed him a series of its eggs in his possession, one of which he kindly gave to him. This egg, taken at Apaj in 1858, measures  $1\frac{1}{4}$  in. by  $1\frac{1}{4}$ , is pear-shaped like other Sandpipers’ eggs, has the ground-colour dull clay-yellow, and is spotted all over with dark umber spots, being in fact a miniature of the egg of our common Redshank.

With regard to the colouring of the soft parts of the present species some different statements have been published. Naumann, for instance, says that “the beak is black, on the hard portion shining like horn, towards the base, particularly on the under mandible, much lighter bluish, greenish, or reddish. Legs much the same as those of *Totanus glottis*; general colour dark bluish green, becoming yellowish at the root of the toes and on the soles, the toe-joints darker, claws blackish brown. Young birds have the legs lighter, greenish blue-grey in colour.” Von Nordmann in Demidoff’s ‘Voyage,’ on the other hand, says, “I found in several adult birds killed in the spring of 1838 in full breeding-plumage, the feet not bluish green, as Naumann and Temminck state, but *reddish black, slightly tinged with greenish on the articulations*. It seems, however, that the greenish feet belong only to young birds.”

In the Plate are represented figures of the Marsh Sandpiper in full summer and winter plumage, sent to us by Mr. T. Robson, of Ortakeny. The descriptions are from the same birds.

In the preparation of the above article we have examined the following specimens:—

*E Mus. Sharpe and Dresser.*

- a.* Guiksa, Asia Minor (*J. Robson*). *b.* Khathanc, near Constantinople (*Robson*). *c.* Sarepta (*Kutter*).  
*d.* Damara-land (*Andersson*).

*E Mus. Lord Lilford.*

- a.* Egypt (*Stafford Allen*).

*E Mus. H. B. Tristram.*

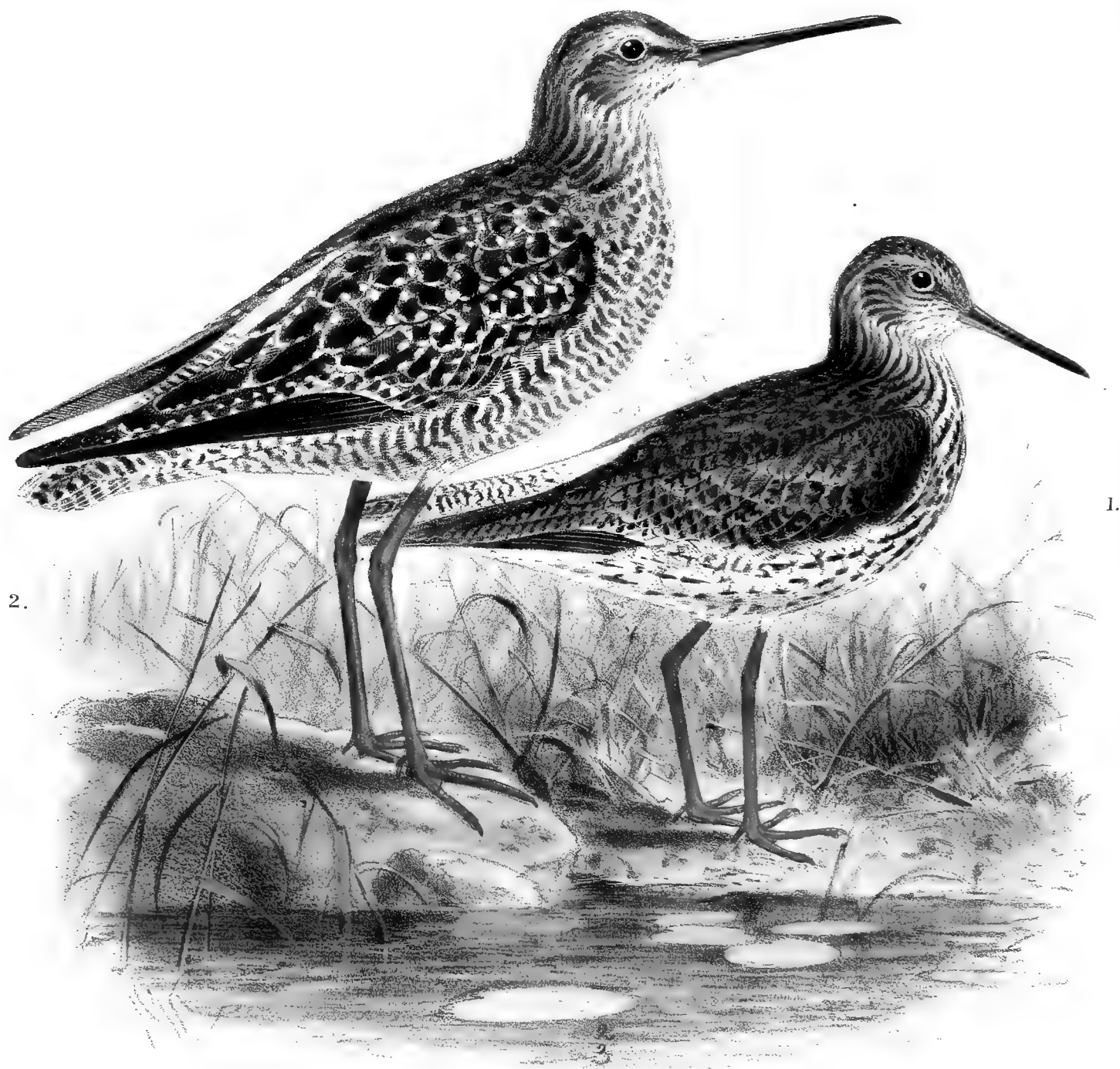
- a.* Memphis (*H. B. T.*). *b.* Etawah, N.-W. India (*W. E. Brooks*).

*E Mus. J. E. Harting.*

- a.* Malta (*Leadbeater*). *b.* Ismid, Asia Minor (*Robson*). *c.* Egypt (*Shelley*). *d, e.* Damara-land (*Andersson*).



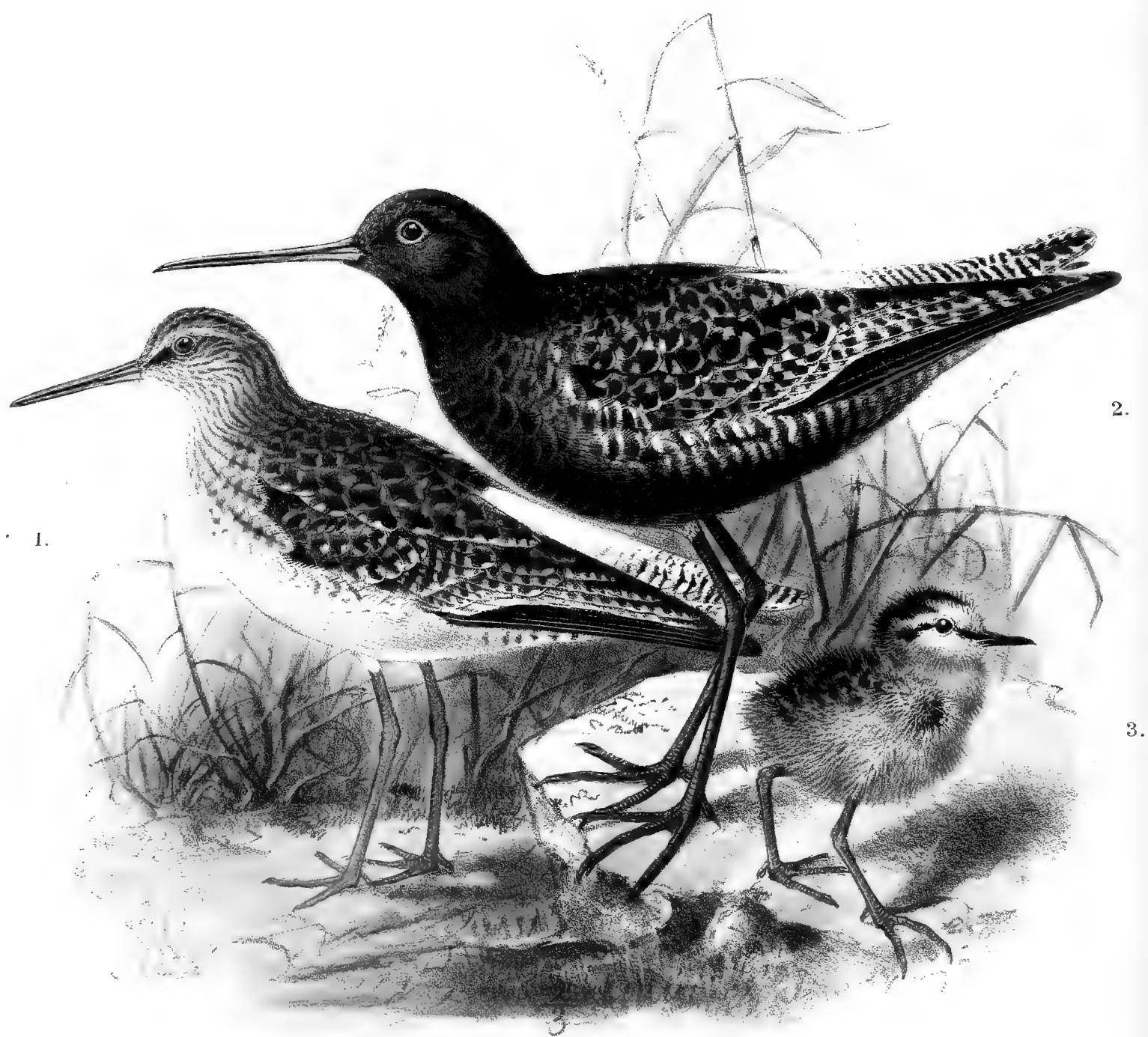




1, COMMON REDSHANK.  
SPRING PLUMAGE.

2, SPOTTED REDSHANK.  
AUTUMN PLUMAGE

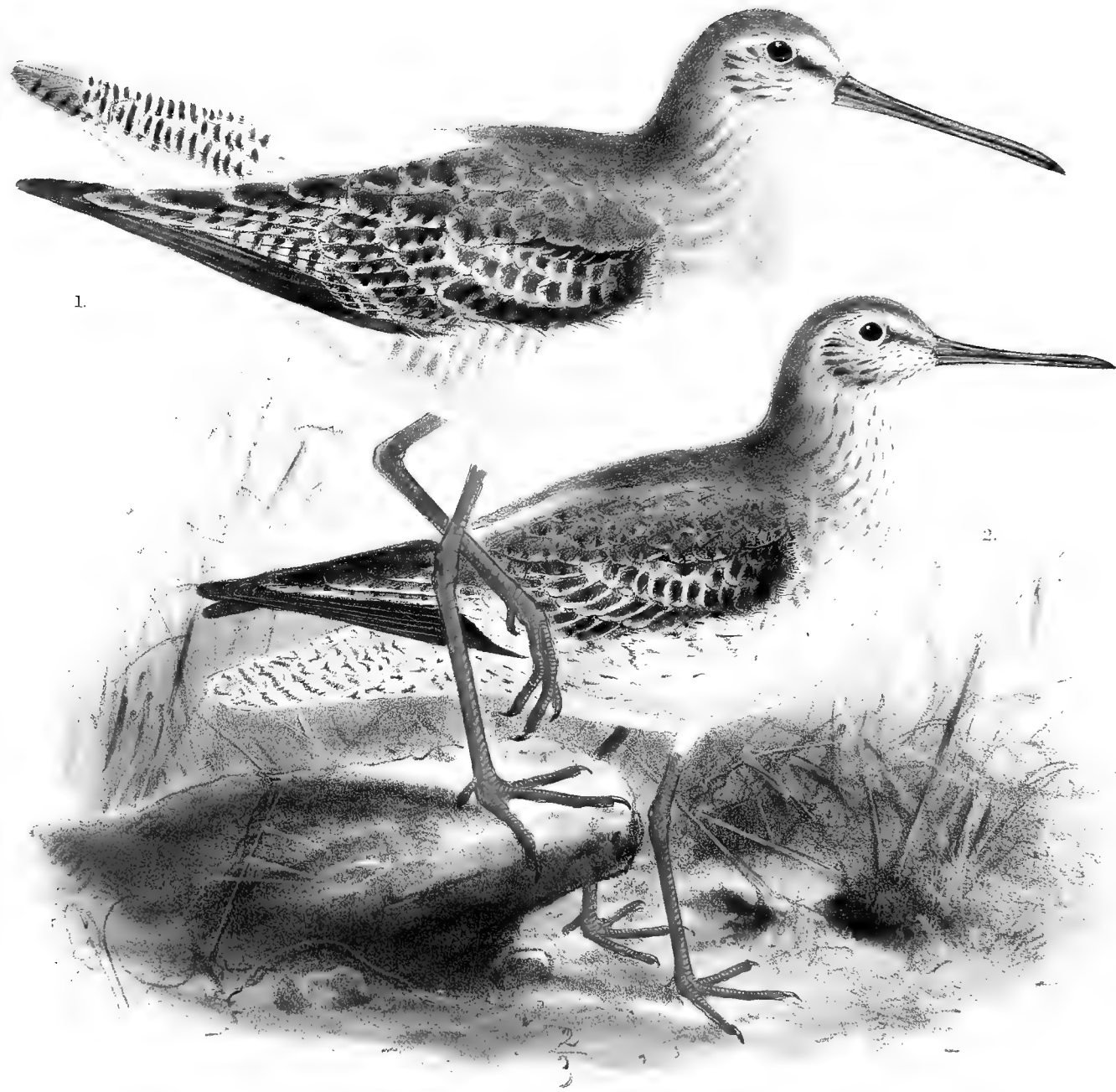




1, COMMON REDSHANK.  
*TOTANUS CALIDRIS.*

2,3, SPOTTED REDSHANK.  
*TOTANUS FUSCUS.*





1, SPOTTED REDSHANK. 2, COMMON REDSHANK.  
WINTER PLUMAGE

## TOTANUS CALIDRIS.

(COMMON REDSHANK.)

- Tringa totanus striatus*, Brisson, Orn. v. p. 196, pl. xviii. fig. 1 (1760).  
*Tringa totanus nævius*, Brisson, tom. cit. p. 200, pl. xviii. fig. 2 (1760).  
*Scolopax calidris*, Linn. Syst. Nat. i. p. 245 (1766).  
*Le Chevalier aux pieds rouges*, Buff. Hist. Nat. Ois. vii. p. 513 (1780).  
*Le Chevalier rayé*, Buff. tom. cit. p. 516 (1780).  
*Tringa gambetta*, Gmel. Syst. Nat. i. p. 671 (1788).  
*Tringa striata*, Gmel. tom. cit. p. 672 (1788).  
*Totanus calidris* (Linn.), Bechst. Orn. Taschenb. ii. p. 284 (1803).  
*Gambetta*, Kaup (*Tot. calidris*, Bechst.), Skizz. Entw.-Gesch. p. 54 (1829).  
*Totanus littoralis*, C. L. Brehm, Vög. Deutschl. p. 636 (1831).  
*Totanus striatus*, C. L. Brehm, op. cit. p. 637 (1831, nec Linn.).  
*Totanus græcus*, C. L. Brehm, Vögelfang, p. 312 (1855).  
*Totanus meridionalis*, C. L. Brehm, op. cit. p. 312 (1855).

*Cam-glas*, *Clabhais-feach*, Gaelic; *Chevalier-Gambette*, French; *Chalrêta*, Portuguese; *Archi-bebe*, Spanish; *Pettegola*, Italian; *Gambett-Wasserläufer*, German; *Tureluur*, Dutch; *Rødben*, *Rødben-klire*, Danish; *Stelkur*, Icelandic and Færoese; *Rödbent-snäppa*, *Tolk*, Swedish; *Rödbenet Sneppe*, Norwegian; *Punajalka-vikla*, Finnish; *Nastojaschy-ulit*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 827, 845; Werner, Atlas, *Gralles*, pl. 18; Kjærbo. Orn. Dan. taf. xxxvi.; Fritsch, Vög. Eur. taf. 34. figs. 4, 6; Naumann, Vög. Deutschl. taf. 199. figs. 1, 3; Sundevall, Sv. Fogl. pl. xl. pls. 3, 4; Gould, B. of Eur. pl. 310; id. B. of G. Brit. iv. pl. 54; Schlegel, Vog. Nederl. pls. 243, 244.

♂ *ad. ptil. æst.* pilei plumis nigro-fuscis pallidè fusco marginatis: corpore suprà fusco-cinereo, collo et dorso nigricante striatis, dorsi plumis ad basin nigricantibus: remigibus primariis nigro-fuscis rachi primi albâ, omnibus in pogonio interno ad basin valdè albo marginatis, secundariis brevioribus albis vix fusco notatis fasciam alarem conspicuam formantibus, secundariis intimis elongatis, scapularibus et tectricibus alarum fusco cinereis nigro-fusco fasciatis et notatis, tectricibus alarum majoribus albo apicatis, externis saturatè fuscis immaculatis: dorso imo et uropygio purè albis: rectricibus centralibus pallidè fusco-cinereis nigro-fusco fasciatis, reliquis cum supracaudalibus albis eodem modo fasciatis: subtùs albus, gulâ, gutture et pectore profusè nigro-fusco striatis: hypochondriis striatis et fasciatis: abdomine centrali et crisso albis, fere immaculatis: subcaudalibus albis nigricante transfasciatis: rostro in parte basali rubro et versus apicem nigro: iride fuscâ: pedibus rubris.

*Ptil. hiem.* pileo, collo posticè et dorso sordidè cinereis immaculatis: remigibus ut in ptilosi æstivali sed sordioribus, secundariis elongatis et scapularibus dorso concoloribus, sed marginibus primariorum vix

fusco notatis: tectricibus alarum cinereis albido marginatis et in his marginibus sordidè nigro-fusco notatis: capitis lateribus et loris albis vix grisescente nigro striatis: regione oculari albâ: subtùs albus, gutture, pectore et hypochondriis vix nigricante striatis, subcaudalibus inconspicuè nigricante transfasciatis: rostro ad basin rufescenti-aurantiaco, in dimidio apicali nigro: pedibus rufescenti-aurantiacis.

♀ haud a mare distinguenda.

*Adult in spring* (female, near Gibraltar, 25th March). Upper parts brown, with a faint ashy tinge, the head, neck, and back striped with blackish, this colour widening towards the concealed base of the feather till it covers the entire basal portion in the dorsal feathers; feathers on the crown blackish brown, margined with pale brown; quills blackish brown; shaft of the first primary white, and the outer and basal half of the inner webs of the primaries white; short secondaries white, but slightly marked with brown, forming a conspicuous white alar bar when the bird extends its wings; elongated inner secondaries, scapulars, and wing-coverts brown, like the back, but barred and marked with blackish; the larger coverts tipped with white, and some of the outer ones dark brown, unbarred; lower back and rump pure white; upper tail-coverts and outer tail-feathers white, barred with blackish, the central rectrices similarly barred, but the ground-colour is ashy brown; throat, neck, and underparts generally white, the throat, neck, and breast profusely striped with blackish brown, the stripes on the breast being almost drop-shaped; flanks barred as well as striped with dark brown; abdomen nearly pure white; under tail-coverts white, barred with blackish; bill blackish towards the point, dark red at the base, iris dark brown, legs red, claws blackish. Total length about 11 inches, culmen 1·95, wing 6·4, tail 2·8, tarsus 1·9, bare portion of tibia about 1·1.

*Male in autumn* (Pagham, Sussex, 11th July). Upper parts brown, with an ashy tinge, with narrow buffy margins to the feathers, there being no signs of the markings which characterize the summer dress; underparts white, striped only on the throat and upper breast, the flanks having also a few markings, the chin being pure white; under tail-coverts slightly barred with blackish.

*Adult in full winter dress* (Albania, December). Crown, hind neck, and back ashy grey, unmarked; quills as in the summer dress, but paler; elongated inner secondaries and scapulars like the back, with only a few markings on the edge of the feather; wing-coverts edged with white, in which edging a few bars and markings are present; sides of the head and space in front of the eye white, slightly streaked with blackish grey; feathers round the eye white; underparts white, very slightly streaked or marked on the throat, breast, and flanks with dull blackish; under tail-coverts slightly barred with blackish; bill and legs as in the summer dress, but the shade of colour is rather orange than red.

THE present species inhabits Europe generally, is met with in Asia as far east as South-eastern Siberia and China, and during the winter migrates as far south in Africa as the Cape colony.

In Great Britain it is a resident, being met with at all seasons of the year, in the summer scattered about in localities suitable for the purpose of breeding; and in the autumn and winter it collects in flocks and roams about the coasts and estuaries. It is not so numerous in England during the breeding-season as it used formerly to be, owing chiefly to the draining of so many fens; but it still breeds not uncommonly in some localities. Mr. W. Vincent Legge writes (*Ibis*, 1866, p. 420) that he found upwards of twenty nests in a low pasture of a few acres in extent in the south-eastern part of Kent in 1866. I have no data respecting its breeding on the west coast of England, though it may nest there.

In Scotland it is numerous at all seasons of the year; and Mr. Robert Gray says that it

breeds plentifully in many inland districts on the west coast, and he has obtained eggs from Forfarshire and Aberdeenshire. Macgillivray found it breeding in the Hebrides; and Selby observed it during the summer in Sutherlandshire. Dr. Saxby speaks of it as being by no means uncommon between the latter part of the summer and the early spring in Shetland, but he did not find it at all numerous during the breeding-season.

In Ireland, according to Thompson, it is common on the coast; but, he adds, only a small proportion of those seen in the autumn and winter breed in the island.

It has not been recorded from Greenland; but in Iceland it breeds both in the northern and southern parts of the island. It appears to be somewhat rare in the Færoes; but Captain Feilden says that in all probability a few pairs remain to breed there every year.

Throughout Scandinavia it is a common species; and Mr. Collett writes that it is common in Norway, and breeds along the whole coast from the Hvalöer up to the Russian frontier, and is especially numerous in Listerland and Jæderen. In the interior it is chiefly to be met with on the fells, where it breeds numerously in the southern districts and, to a certain extent, in the lowlands, and is everywhere common during migration. In Sweden it is said to be one of the commonest Sandpipers, not only in the southern provinces but up far into Lapland. There as elsewhere in the north of Europe it is a migrant, arriving in Southern Sweden late in April and leaving in September. In Finland it is common throughout the country during the breeding-season; but, unlike the Spotted Redshank, it is there found on the coast only, and not inland unless in very exceptional cases. It arrives early in May, and soon spreads over the coast, where it breeds up to the high north. I found it nesting numerously on the small islands off Uleåborg, as well as on the mainland. Brander states that it breeds in Pudasjärvi; Dr. Palmén observed it at Muonioniska on the 9th June, and says that both old and young birds have been obtained at Utsjoki, in Lapland. It is found in Russia at least as far as Archangel, whence I have received many specimens shot during the summer season: and Sabanäeff records it from Central Russia, but as seldom seen except on passage. In the Ural it is very numerous, being found on the eastern slope from  $59\frac{1}{2}^{\circ}$  N. lat. It breeds very rarely there, but has been met with nesting as far as Pavda. Teplouhoff found it nesting near  $58\frac{1}{2}^{\circ}$  N. lat. In the Baltic Provinces and on the coasts of Northern Germany it is common during the summer season, both on the outer fringe of the coast-line and in marshy and low swampy localities; and Mr. Benson writes to me respecting its occurrence in Denmark, that "it is common everywhere, more especially on the coast, arriving in April and leaving again in August and September, between which times it is very numerous on account of the many suitable breeding-places in the northern parts of the country. We have instances of individuals being obtained in the winter; for Mr. Fischer shot an old female on the 23rd February; but it is possible that this may have been a bird which had arrived unusually early from the south." It is also said to breed in some parts of the interior of Germany. Naumann states that it is not uncommon in Central and Southern Germany, numerous on the shores of the Baltic and North Sea, and during migration one of the commonest of the Waders which occur in Germany. On the coast of Holland it is common; and Baron von Droste Hülshoff speaks of millions being seen on the island of Borkum during the two seasons of migration. Mr. Labouchere informs me that it is the most common Wader in Holland after the Lapwing, arriving in April and leaving in August or September, and it breeds numerously

in that country, but is not said to breed in Belgium, where it is common during passage. Messrs. Degland and Gerbe say that in France it is a resident in the southern provinces, and is met with in the spring and autumn in the north, numbers being captured in the month of March between Douai and Cambrai.

Professor Barboza du Bocage includes it in his list of the birds of Portugal as "common." And in Spain, according to Colonel Irby, it is chiefly migratory in Andalucia, passing north in great abundance towards the middle of April; but it is frequently seen in winter. He also found it breeding commonly in the marismas of the Guadalquivir. Mr. A. von Homeyer also says (J. f. O. 1862, p. 427) that it is one of the commonest Waders in the Balearic islands. As above stated, it is a resident in the south of France; and it occurs in Savoy, but, though it cannot breed far distant, it does not appear to remain there. In Italy it is not very numerous, but is said to breed in the Venetian territory. It is numerous in Sicily, and is said by Mr. A. B. Brooke (Ibis, 1873, p. 338) to be extremely common in Sardinia during the winter season. Mr. C. A. Wright speaks of it as being "rather common at Malta in March and April and again in September, and is occasionally observed in the summer and winter months;" and Lord Lilford states that in Albania it is abundant from October to April, and a few may occasionally be seen at all seasons of the year. Both Von der Mühle and Lindermayer state that it is extremely common in Greece from September to about May, when almost all leave; but, according to Lindermayer, a few stragglers remain for the summer in the northern provinces of Greece. It certainly breeds in Southern Germany, as Dr. A. Fritsch writes (J. f. O. 1871, p. 389) that about ten years previously he found it breeding numerously near Pardubie, which is no longer the case, but in the spring of 1870 he found about twenty individuals nesting on the Zvolenover lake, near Frauenberg, and adds that he observed them trying to drive away the Crows from their breeding-places, uttering loud cries. It is said to be common on the Danube; and Von Nordmann speaks of it as being common in Southern Russia; but none appear to remain over winter on the north shores of the Black Sea, nor are there many localities in Southern Russia where it breeds. Strickland records it as common in the swampy districts of Asia Minor near Smyrna during the winter; and Canon Tristram met with it in Palestine.

In Africa it is found as far south as the Cape of Good Hope, but appears less common on the eastern than on the western side of the continent. Captain Shelley writes (B. of Egypt, p. 255) that it is "rare on the Nile above Cairo, but very abundant in the Delta and the Fayoom, where it is generally to be met with in scattered flocks throughout the more marshy districts." Von Heuglin says that large flocks are met with throughout North-east Africa during the winter; and he states (Ibis, 1859, p. 347) that immense flocks were observed in August near Massowah, and after that single specimens were seen everywhere on the Danakil and Somali coasts. Messrs. Finsch and Hartlaub, however, do not include it in their work on the ornithology of East Africa. In North-western Africa it is stated by the various authors on Algerian ornithology to be numerous; and Mr. Taczanowski says that it is the commonest Wader in the province of Constantine. Mr. Salvin observed it near Sousa, in Tunis; and Colonel Irby found it "in some numbers at the lakes of Ras Dowra, in Tangier, towards the end of April, when they were evidently beginning to nest." This latter gentleman also gives the following note from Favier:—"This Redshank is very abundant near Tangier, in small lots which frequent the edges of rivers and lakes and

mostly pass northward during March and April, returning to remain for the winter in September and October. Some, however, remain in the country for the breeding-season." It has been obtained by Pel in Ashantee; and Mr. Ussher writes (*Ibis*, 1874, p. 74) that it is tolerably common on the Gold Coast and at the mouths of the rivers in Western Africa. Mr. Harting has received it from Walwich Bay; and Mr. E. L. Layard writes (*B. of S. Afr.* p. 325) that it is "found sparingly about the Knysna estuary, and the mouth of the Salt River, near Capetown, in both of which places I have shot them. I also detected them among some birds shot by Messrs. Chapman on Lake Ngami. At Zoetendals Vley they were abundant in November." It has also been recorded from the Canaries by Dr. C. Bolle, who states (*J. f. O.* 1857, p. 337) that a specimen is in the Leon collection which was obtained there; but Mr. Godman did not meet with it in the Azores.

To the eastward the common Redshank is found as far as China. De Filippi observed it in July near Sultanieh; and Mr. Blanford says that it is occasionally seen in Baluchistan in winter, and he thinks that it probably breeds on the Persian highlands, at the Lake of Shiraz, and other places. Severtzoff states that it is common in Turkestan during passage, and breeds, though rarely, in the north-eastern portion of that country. Dr. Jerdon speaks of it as being common throughout the greater part of India in the cold season, and often seen in large flocks. Mr. A. O. Hume observed it in Kurrachee Harbour. Mr. Layard states that it is common in Ceylon; but Mr. Holdsworth did not observe it when there. It certainly, however, is found on the Andaman Islands; for Lord Walden records it (*Ibis*, 1874, p. 174) from Port Blair, in the South Andamans. Von Pelzeln states that it is found in the Nicobars; and Mr. A. O. Hume writes (*Stray Feathers*, ii. p. 299) that he noticed it at Macpherson's Straits. Père David states that it occurs in Mongolia on passage; and Mr. Swinhoe records it as found generally throughout China during the winter season. Dr. Radde met with it in South-eastern Siberia, and writes (*Reis. im Süd. von Ost-Sib.* ii. p. 328) that numbers appeared at the Tarei-nor on the 1st of May (old style), and remained there to breed; about the 29th July they were collected in flocks in the mountains near Altansk, and were very shy; and in the first half of August they began to leave, none being seen at the Tarei-nor after the first of September. Middendorff observed it on the elevated portions of the large Schantar Island on the 9th of August, and shot specimens on the 27th August further inland from the south coast of the Sea of Ochotsk, at Ujakon. It does not occur in America.

Except during the summer season (as in some countries the Redshank breeds in the interior), it is most generally met with on the coast, especially in places where there are large mud flats, and on the muddy shores of the river-mouths, or in pools left by the tide. Exceedingly active, it runs with the greatest ease, and when picking up food on a beach when the surf is breaking will dodge the waves with apparent ease, running with surprising swiftness. On the wing it is equally agile, flies swiftly, but with a somewhat undecided wavering flight, often uttering its shrill cry. It is exceedingly shy and cautious, and it is most difficult to approach within gunshot of it. When alarmed it runs off, every now and then stopping for a moment, utters its loud cry and vibrates its body, then, suddenly springing up, flies off calling loudly, and soon alarms any other birds that may be in the vicinity. It feeds on worms, small insects of various kinds, mollusca, and small crustaceans, which it picks up on the shore or amongst the

mud, and often wades into the shallow pools in search of food. Colonel Irby writes (*Ibis*, 1861, p. 239), the present species "has a curious way of feeding, which I often noticed: a flock of perhaps thirty or forty will form a sort of oblique line, each one a little in rear of the other, and advance across a shallow jheel, all with their heads down half under the water, moving them from right to left with great rapidity. The noise they make in the water is plainly audible." This peculiarity in the Redshank I have never myself noticed, though I have often seen Avocets feeding in the manner described by Colonel Irby.

When on the wing the Redshank is easily recognizable from other allied species by the broad white band on its wings, which is very distinctly displayed. It breeds both in marshy localities on the coast, and also in suitable localities in the interior. In Finland, where I have most frequently found the eggs of this species, it breeds altogether on the coast, and I usually found the nests at a very short distance from the water, on the small islands which fringe the coast. These islands are covered with grass in patches; and usually the nest was amongst the grass, either in a bunch of grass carefully concealed, or else in a tolerably open situation. The nest is nothing but a depression in the soil in which a few bits of grass are placed, these latter being a mere apology for a lining; and I always found the full complement of eggs to be four, which, like the eggs of other waders, are always arranged with the points towards the centre. Mr. Vincent Legge, who found it breeding in tolerable numbers in the south-eastern part of Kent, writes (*Ibis*, 1866, p. 420) as follows:—"The nests are most cleverly concealed, being situated in the centre of a green tuft of grass, the blades of which are carefully bent over the top, and the openings, by which the bird enters and leaves the nest, closed up on her being frightened from it. A few tracks in the surrounding grass are the sole traces of the existence of the nest." In Scotland it appears to breed more frequently in the interior than on the coast. Mr. Robert Gray says that it breeds within ten miles of Glasgow; and he further writes, "on the banks of Loch Lomond about fifteen or twenty pairs annually take up their summer quarters in a grass park on the farm of Mid-Ross, where I have seen their nests. In this locality the birds generally select a tuft of ragweed, or other plant, under the shade of which the eggs are deposited without much preparation in the way of nest-making—the few straws on which they are placed looking more like an accidental lining than one designed by the owners. These nests are exceedingly difficult to find. In very dry seasons, when the loch is low, the Redshanks sometimes choose the line of high-water mark for a breeding-place, the nests, if they may be called so, being placed on the mass of sticks and straws which are blown on shore by the wind, and huddled together by the action of the little waves."

I possess a fair series of Redshanks' eggs, chiefly taken by myself on the coast of Finland, where it is common during the breeding-season. In colour these eggs are clay-buff, marked with purplish brown underlying shell-blotches, and dark brown surface-spots and blotches. Some are marked all over the surface of the shell with small spots, whereas others have only a few large blotches, and others, again, are tolerably closely covered with large blotches and small spots intermixed. In size they vary from  $1\frac{2}{10}$  by  $1\frac{5}{40}$  to  $1\frac{2}{10}$  by  $1\frac{8}{40}$  inch.

In the neighbourhood of its nest, when its domain is invaded by intruders, the Redshank appears to forget its usual caution in intense anxiety for the safety of its progeny. It will fly to meet the intruder, using every endeavour to lure him away, and when the nest is approached

will fly close around, every now and again darting swiftly down with a rushing sound, uttering its loud plaintive cry. When the young are hatched they are tended with the utmost care by their parents until able to fly and take care of themselves.

The specimens figured are a full-plumaged spring-killed bird on the same Plate with the autumn-killed specimen of *T. fuscus*, an autumn-plumaged bird on the Plate with the young in down and adult in spring of *T. fuscus*; and on a third Plate are figured the present species and *T. fuscus* in full winter dress.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. London market, September 1867. *b*, ♂, *c*, ♀. Pagham, Sussex, August 29th, 1866 (*J. E. Harting*). *d*, ♂. Pagham, July 11th, 1870 (*R. B. Sharpe*). *e*, *f*, *g*, *h*, *i*, *j*. Pagham, July 1870 (*R. B. S*). *k*, ♀. Orkney (*Dunn*). *l*. Near Seville, March 3rd, 1870 (*H. Saunders*). *m*, ♀. Near Gibraltar, March 25th, 1872 (*Col. Irby*). *n*. Albania, December (*Hanbury Barclay*). *o*. Massuah, Abyssinia (*W. Jesse*).

*E Mus. H. B. Tristram.*

*a*, ♀. Pulos, February 10th, 1858 (*H. B. T.*). *b*, ♂. Sabtcha (*H. B. T.*).

*E Mus. Howard Saunders.*

*a*, ♂. Near Seville, May 19th (*H. S.*). *b*, ♀. Coto de Doñana, March 20th. *c*, ♂. Granada, April. *d*. Malaga, September 23rd. *e*. Valencia, November 7th.



## TOTANUS FUSCUS.

(SPOTTED REDSHANK.)

- Limosa fusca*, Briss. Orn. v. p. 276, pl. xxxiii. fig. 2 (1760).  
*Scolopax fusca*, Linn. Syst. Nat. i. p. 243 (1766, ex Briss.).  
*La Barge brune*, Buff. Hist. Nat. Ois. vii. p. 508 (1780).  
*Tringa atra*, Sander, Naturf. xiii. p. 193, fide Gm. Syst. Nat. i. p. 673 (1788).  
*Scolopax nigra*, Gmel. Syst. Nat. i. p. 659 (1788).  
*Scolopax curonica*, Gmel. tom. cit. p. 669 (1788).  
*Scolopax totanus*, Gmel. tom. cit. p. 665 (1788).  
*Scolopax cantabrigiensis*, Gmel. tom. cit. p. 668 (1788).  
*Scolopax natans*, Otto, Uebers. von Buff. Vög. xxvi. p. 234 (1797).  
*Totanus maculatus*, Bechst. Orn. Taschenb. ii. p. 284 (1803).  
*Totanus fuscus* (Linn.), Bechst. tom. cit. p. 286 (1803).  
*Totanus natans* (Otto), Bechst. tom. cit. p. 286 (1803).  
*Tringa longipes*, Leisl. Nacht. zu Bechst. Naturg. Deutsch. Heft ii. p. 189 (1813).  
*Tringa totanus*, Meyer, Vög. Liv- u. Esthl. p. 200 (1815).  
*Totanus raii*, Leach, Syst. Cat. Mamm. and B. Brit. Mus. p. 31 (1816).  
*Erythroscelus*, Kaup (*Tot. fuscus*, Bechst.), Skizz. Entw.-Gesch. p. 54 (1829).  
*Totanus ater*, C. L. Brehm, Vög. Deutschl. p. 634 (1831).

*Spotted Redshank*, *Dusky Redshank*, English; *Barge brune*, *Chevalier brun*, *Chevalier arlequin*, French; *Caballero arlequin*, Spanish; *Chio-chio*, Italian; *dunkelfarbiger-Wasserläufer*, *grosser Rothschenkel*, German; *zwarte Ruiter*, Dutch; *Sortsneppe*, *Harlekingsneppe*, *Stor Rödben*, *Sortegraa Klire*, Danish; *Sortsneppe*, Norwegian; *Svartgrå snäppa*, Swedish; *Mustavikla*, Finnish; *Polevoi-petoushock*, *Teomniy-ulit*, Russian.

*Figurae notabiles.*

D'Aubenton, Pl. Enl. 875; Werner, Atlas, *Gralles*, pl. 17; Kjærb. Orn. Dan. taf. xxxvi.; Fritsch, Vög. Eur. taf. 34. figs. 1-3; Naumann, Vög. Deutschl. taf. 200; Sundevall, Sv. Fogl. pl. xl. figs. 1, 2; Gould, B. of Eur. pl. 309; id. B. of G. B. iv. pl. 55; Schlegel, Vog. Nederl. pl. 241.

*Ad. ptil. æst.* capite, collo, pectore et corpore subtus fuliginoso-nigris, plumis nonnullis vix albicante apicatis: dorso, secundariis intimis elongatis, scapularibus cum tectricibus alarum fumoso-nigricantibus vix metallico nitentibus et ex parte griseo lavatis, plumis omnibus albido apicatis et lateraliter albido notatis: remigibus nigricantibus, extimo rhachi albâ, primariis in pogonio interno ad basin albido notatis, secundariis albido notatis et apicatis: uropygio albo: supracaudalibus nigris albo fasciatis: caudâ fumoso-nigrâ, rectricibus centralibus vix griseo fasciatis, omnibus lateraliter albido notatis et eodem colore apicatis: hypochondriis et subcaudalibus albo fasciatis: axillaribus albis vix griseo notatis: rostro nigro, ad basin rubro: iride fuscâ: pedibus sordidè et saturatè rubris.

*Ad. ptil. hiem.* pileo, nuchâ, collo posticè et lateraliter et dorso saturatè cinereis immaculatis, vix brunneo tinctis: a basi rostri supra oculum lineâ albâ fere ad nucham ductâ: regione oculari albâ: loris et lineâ sub oculo cinereis: capitis lateribus et gutture vix cinereo striatis: corpore subtùs albo, hypochondriis vix fumoso-cinereo notatis: alis et caudâ ut in ptilosi æstivali, sed pallidioribus et grisescentioribus: pedibus rubescenti-aurantiacis.

*Adult Male in summer* (Archangel, 17th May). Head, neck, breast, and underparts sooty black, some of the feathers, especially on the chin and hind neck, narrowly tipped with white; back, elongated inner secondaries, scapulars, and wing-coverts sooty black, with a slight metallic gloss, and, to some extent, washed with grey, all the feathers tipped and slightly marked here and there on the sides with white, giving the upper parts a spotted appearance; quills blackish, the shaft of the first quill white, the primaries mottled with white on the basal portion of the inner web, the secondaries strongly marked and tipped with white; rump white; upper tail-coverts blackish, barred with white; tail sooty blackish, the central feathers with indistinct greyish bars, and all marked on the edge and tipped with white; flanks and under tail-coverts tolerably broadly barred with white; under wing-coverts white, slightly marked with sooty grey; axillaries white, with the faintest spots of sooty grey on one or two feathers; bill blackish, except at the base of the lower mandible, where it is reddish; iris dark brown; legs dark red. Total length about 12 inches, culmen 2·5, wing 6·7, tail 2·82, tarsus 2·3, bare portion of tibia 1·45.

*Adult Male in winter* (Malta). Crown, nape, hind neck, and back dull ashy with a brownish tinge, unspotted; sides of the neck similarly coloured; from the base of the bill, on the side of the forehead, a broad white streak passes over each eye; and the space immediately round the eye is also white; lores and a streak passing below the eye dull ashy; sides of the head and lower neck slightly streaked with pale ashy grey; flanks faintly marked with sooty grey; underparts otherwise pure white; wings and tail as in the summer dress, but much greyer and paler; legs lighter-coloured, being more of a dull-orange reddish tinge.

*Female.* Similar to the male.

*Young in autumn* (Stockholm, 26th August). Resembles the winter-plumaged bird above described, but has the upper parts much darker, the neck and back marked with white, the back and wings with a faint metallic gloss, and the underparts barred and marked all over with pale sooty grey, which is darkest on the lower neck and breast; chin pure white.

*Young in down* (Muonioniska, July). Covered with down close at the base, but with the tips radiating out like hairs; upper parts variegated blackish brown and brownish buff; forehead buff, with one central dark stripe, which joins the blackish brown on the hind crown; a narrow blackish stripe passes also from the base of the bill through the eye to the hind neck; underparts dusky white, clouded with brownish buff on the breast and flanks.

LIKE many of our Waders the present species has a wide range; for it occurs throughout Europe, has been met with in the winter as far south as the Cape of Good Hope, and is recorded in Asia from as far east as China. It does not, however, inhabit the Nearctic Region.

In Great Britain the present species is, comparatively speaking, rare. It has never been known to breed with us, and only occurs now and again during migration on our coasts, its visits being chiefly restricted to the eastern side of our island; and it is more frequently met with

in the autumn than in the spring. Mr. Stevenson records (B. of Norfolk, ii. pp. 203–207) numerous instances of its occurrence in that county, both in the spring and autumn; but it appears to be now but a rare straggler. Mr. Cordeaux (B. of Humber District, p. 111) says that he only met with four examples in that district, all in the autumn; but he thinks it is of more regular occurrence there in the autumn than is generally supposed, it being mistaken for the young of the common Redshank. On the west side of England it is, as above stated, rare; and Mr. Cecil Smith informs me that it is very rare in Somersetshire, and he himself has never seen it from there, and only includes it on the authority of Montagu, who got one from near Bridgewater. In Scotland, according to Mr. Robert Gray (B. of the W. of Scotl. p. 290), “it has not been traced to any of the western districts; but on the east coast of Scotland it has frequently been obtained, in localities ranging from Haddingtonshire to Caithness. It has been taken in Banffshire by Mr. Edward, and in Aberdeenshire by Mr. Angus. In the Orkneys, as I find from a manuscript note in Messrs. Baikie and Heddle’s work, ‘one was shot by Mr. Strang in Sanday, in September 1849.’” It is not recorded from the Shetlands; and must be very rare in Ireland, as Thompson only mentions one instance of its occurrence there.

There is no record of its occurrence in Greenland or Iceland, nor does it appear to have occurred in the Færoes. It is found in Scandinavia, where it is not uncommon in the southern parts, but breeds in considerable numbers in the north. Mr. Collett says that it breeds not uncommonly in Northern Norway, both on the mainland and the islands, as, for instance, on Lofoten. It likewise breeds here and there in the southern districts, as, for instance, in Orkedale, in Trondhjems Stift, and in the fells of Land and Valdres, but is seen in the lowlands but very rarely during passage. He further says that it nests as far north as Vadsö, and was found sparingly at Bosekop in Alten, on the 15th July, 1872, and in East Finmark it is even common in some localities. During passage it appears to be common throughout Norway. In Sweden, as in Norway, it breeds only in the northern districts, but is common in other parts of the country at the two seasons of migration, being met with in the vicinity of Gothenburg late in April, and again in September and October; but in Northern Skåne small flocks of six or eight individuals are seen late in August; and Nilsson says that on the Norwegian coast he has seen young birds able to fly, in company with the parent birds, in July on the islands off Nordland. In Central Lapland it breeds numerous, but does not extend up to the extreme north. Malm says that it is most numerous in Enare-Lapland; and the number of eggs obtained by Wolley and his collectors near Muonioniska proved its abundance there. Dr. Palmén writes (Finl. Fogl. ii. p. 148) that it is “common in the parishes of Muonioniska and Enontekis, and was observed as far as Kilpisjärvi in 69° N. lat. According to Malmberg it bred in 1871 at Suonenjoki-kapell, in Savolaks (62° 30' N. lat.), but has not been known with certainty to breed further south.” He adds that, according to Mr. Casimir Brander, it breeds at Pudasjärvi, where it is common—which I can confirm, having received its eggs from Mr. Brander, whose acquaintance I made when at Ijå, in the north of Finland. It is tolerably common in Southern Finland during the two seasons of passage.

In Russia it is common in some localities, and is said to be not uncommon near Archangel, whence I have received specimens. Sabanäeff says that in the Government of Jaroslaf it is rare even during passage, but sometimes breeds in that of Moscow, and is common in the spring.

He also met with it at Pavda, in the Ural, as also in the southern portion of the Ekaterinburg district; but it is, he adds, one of the rarest of the Sandpipers.

In North Germany it is a migrant, passing in the spring on its way to its breeding-grounds, and again in the autumn on its way south, but is not common. Mr. C. Vangerow says that it is not common in Prussia; Von Negelein also speaks of it as being rare in Oldenburg; and Borggreve adds that the same may be said respecting its occurrence throughout the whole of North Germany, Westphalia, &c.; but he himself found it common at Oderbruch during passage. In Denmark, Mr. Benzon writes, "it occurs not unfrequently during passage, but never remains to breed. Small flocks may be seen on the shores in all the Danish provinces in August and September; and stragglers are even seen late in July. Should the season be an early one, many of the birds are still in summer plumage; but those which arrive later have white feathers on the breast. It is said that the spring passage takes place late in April; but in any case but few pass through Denmark on their way north to breed; for I know of no specimen shot here in the spring, whereas I possess many both young and old birds obtained after the breeding-season, which, I take it, is from the end of May to the end of June, as I possess eggs from Lapland taken at different times from the 30th May to the 22nd June." On the Dutch coast and in Belgium it occurs during passage. Baron von Droste Hülshoff says that in some seasons it occurs numerously, whereas in others it is altogether wanting. In September 1864 it was common on the Island of Borkum, and was not seen there again until 1868. Mr. Labouchere informs me that it is met with on the muddy shores of the Zuiderzee, in Holland; and, according to Baron De Selys-Longchamps, it is not uncommon in Belgium during passage, and has been met with in the marshes of Flanders and on the Moselle. In France, Messrs. Degland and Gerbe write, it is more frequently observed on the spring passage, when specimens are usually caught in nets between Douai and Cambrai, and near Abbeville; but it is rarely obtained in breeding-dress. Professor Barboza du Bocage records it from Portugal as rare; and in Spain it is said to occur during the two seasons of migration, but Colonel Irby never obtained a specimen. Mr. Howard Saunders, however, says (*Ibis*, 1871, p. 387) that it is a regular but not a numerous winter visitant, and he procured a fine female at Malaga in the month of March. Herr A. von Homeyer mentions (*J. f. O.* 1862, p. 428) that he observed it in the Balearic Isles, but not later than the end of May.

In Savoy it is said by Bailly to appear in small numbers in the spring, and again, though less commonly, in the autumnal passage; and it also passes through Italy, but does not appear to winter on the mainland, although, according to Salvadori, some few individuals remain over the winter in Sicily and Sardinia; and Mr. A. B. Brooke writes (*Ibis*, 1873, p. 338) that he "saw a few single birds about the stagnos of St. Giusta, near Oristano, during the beginning of March;" and Mr. C. A. Wright says that it is most often seen at Malta from March to May.

In Southern Germany it is said by Dr. A. Fritsch (*J. f. O.* 1871, p. 389) to be common during the autumn passage, in the months of September and October, on the lakes near Frauenberg and Pardubic, in Bohemia, but in the spring it rarely passes through that country. In Greece it is said by Von der Mühle to occur during the winter; but Lindermayer states that it is merely an occasional visitant during the two seasons of passage, and, according to Dr. Krüper, the specimens in the Athens Museum were obtained in March, April, and May. Captain

Sperling speaks of it as being commoner than the Greenshank at Missolonghi; and Colonel Drummond-Hay speaks of it as being rare at Corfu. In Southern Russia, according to Professor von Nordmann, it appears regularly in the spring and autumn, but does not winter on any part of the north coast of the Black Sea, though both there and on the Caspian it is numerous during passage; but in the Uman district, in Southern Russia, it appears to be rare, as Mr. Goebel speaks only of having shot one in September 1867 and a pair in August 1869. I do not find it recorded from Asia Minor; nor does Canon Tristram refer to it as occurring in Palestine; but it is met with in North-east Africa, and, according to Captain Shelley (B. of Egypt, p. 255), "ranges throughout Egypt and Nubia, but appears to be rather sparingly distributed; for we only met with it on one occasion, near Sakkara, on the 7th of April, where we killed several birds out of a large flock that had been feeding in a small muddy pool." Von Heuglin believes that he saw it at Ras Belul, on the Somali coast; but it appears, on the whole, to be of somewhat rare occurrence in North-east Africa. On the western side it is said by Loche to occur rarely during passage in Algeria; but Mr. Taczanowski says (J. f. O. 1870, p. 53) that he found it common about Fezzara. Colonel Irby writes that in Favier's notes it is said to "frequent the vicinity of salt marshes near Tangier during the months of September and October." It is found as far down as South Africa, though not recorded, so far as I can ascertain, from the intervening districts on the west coast. Mr. E. L. Layard, however, who records it from the Cape colony, only obtained a single specimen at the Knysna.

To the eastward it is met with right across the continent of Asia to Kamtschatka. Mr. Blanford did not meet with it in Persia, where, he says, it doubtless occurs. Mr. A. O. Hume says (Stray Feathers, i. p. 248) that it is almost as common as the Greenshank in the rivers of the Punjab, and numerous enough in Sindh, especially about the larger lakes, where he occasionally met with it in vast flocks. Dr. Jerdon states (B. of India, ii. p. 702) that it is "found throughout India in the cold season, either solitary or in moderate parties;" and Colonel Irby writes (Ibis, 1861, p. 239) that it is "frequently seen in small flocks during the cold season, but was not noticed in summer plumage." Mr. Layard states that it is common in Ceylon; but Mr. Holdsworth did not meet with it there. Severtzoff writes (Turk. Jevotnie, p. 69) that it occurs in North-western Turkestan, where it is met with both during the breeding-season and also on passage; and it appears to occur throughout Northern Siberia. Middendorff writes that it breeds not very uncommonly on the Boganida, where he observed it up to the 25th August (old style); and Dr. G. Radde obtained a single specimen (a young female) at the Tarei-nor, in September 1856. He never obtained it in spring or summer, and adds that it was extremely rare in the autumn. Von Schrenck appears not to have met with it; but Dr. Dybowski states (J. f. O. 1868, p. 337) that it occurs at Darasun during passage. Steller records it from Kamtschatka; and, according to Messrs. Finsch and Hartlaub, it has also been recorded from the islands between Kamtschatka and America. Père David says that it occurs on passage, but is rarer than *Totanus calidris*, in Mongolia; and Mr. Swinhoe records it (P. Z. S. 1871, p. 406) from Canton, Tientsin, and Shanghai.

In its habits the present species assimilates tolerably closely with the common Redshank, from which, in all stages of plumage, it is easily distinguishable by not having the short secondaries white. It is, however, by far not so much a frequenter of the sea-coast as that bird,

and, indeed, is only met with on the sea-shore during passage, and then but seldom. Inland sheets of water, especially where the shores are a little muddy or swampy, morasses where there are little open patches of water, and flat banks of streams and rivers are its favourite haunts at all seasons, except that, unlike almost any other Wader, it chooses very dry localities in forest-districts for the purposes of nidification. It usually during passage visits places where there are neither bushes nor reeds on the shore, but where it is open and the ground is soft and muddy; and it is especially fond of places where the water is shallow and it can wade about in search of insects &c. Not only does it, however, wade often, but it swims with almost as much ease as a Phalarope, evidently from choice when the water is rather too deep for it to wade, and not only when compelled to take to the water. Naumann says that he has seen one drop on to the water when on the wing and paddle quietly to the shore. It swims very lightly, like a Gull, very little of the body being in the water, and, when frightened by a passing Hawk, will not only take to the water, but dive several times in succession and come up at some distance from the place where it plunges under the surface. It is an exceedingly shy and wary bird, and I know well from experience how difficult it is to approach within gunshot of it. When migrating in the autumn they often collect in small flocks or companies, but, comparatively speaking, seldom join other species. Its call-note is loud and very clear, resembling the syllables *too-it* or *tschoo-it* uttered rather quickly, and generally singly, some considerable interval elapsing before the syllables are again uttered—except when suddenly alarmed, when it will use the note twice in succession, rather hurriedly, as expressive of fear. It is frequently used when a small flock is scattered about, to call up a straggler. Naumann says that he has also heard it utter a low note, *tick, tick, tack*, as a sort of welcome, when one drops down from the wing to join others which are on the ground. It is said to be a quiet and comparatively easily tamed bird, and to thrive well in confinement; but from personal observation I know nothing on this point, never having kept one. It feeds on small crustaceans, worms, and all sorts of water-insects, the nature of its food depending somewhat on the locality where it has taken up its abode.

It is only, comparatively speaking, quite lately that any thing definite has been known respecting its nidification. None of the Scandinavian authors published any reliable information relative to its breeding-habits and eggs; and even Degland and Gerbe, as late as 1867, write only that "*elle se reproduit dans les régions du cercle arctique. Les œufs nous sont inconnus.*" The first reliable information appears to be that obtained by the well-known naturalist the late Mr. John Wolley, and by him communicated to Mr. Hewitson, who published it in the last edition of his well-known work.

I am indebted to Professor Newton for the loan of a letter, addressed to Mr. Hewitson, under date 17th October, 1854, by Mr. Wolley, who, without taking any credit to himself for being, as he certainly was, the first ornithologist to discover the eggs of this Wader, modestly announces his discovery as follows:—"I expect that henceforth the Spotted Redshank will always start up in my memory at the first mention of Lapland. It is so peculiar to the country, so remarkable in its appearance in summer, and so often calling attention to itself by its striking actions—whilst my ignorance of its nest and eggs for a whole year after my arrival in the far north kept up in me during that time the liveliest interest concerning it. A bird with so much character was easy to talk about. I soon found that it was known amongst the people by several names,

all more or less expressive; and in my drives about Finland and into Norway during the winter I had heard from so many quarters accounts of its nesting-peculiarities, that I only waited for its return here to see them confirmed. It does not keep one long in suspense. It comes as soon as the snow is off the ground, and lays its eggs with very little delay. At this time one may hear a singular call in the marshes, which the Finns express by the sound *reevat*, corresponding to a word in their language meaning *an evil spirit*; and one of the names of the bird is taken from it—a name always spoken with a spiteful emphasis by Reindeer-stalkers; for this ‘Rivattu’ is as mischievous to them as a Grey Crow is to a Highland forester, or a Gull to a seal-shooter. But the cry with which it spoils their sport is *tjeuty*; and from this another name is derived, generally coupled with the distinctive epithet corresponding to *black*, or with one meaning *burnt wood*; but whether this last is taken from the colour of the bird, or from a common place of resort for it, or from both, I am not sure. Certain it is that this black bird not unfrequently lays its eggs in a part of the forest which has formerly been burnt; and here is one of its most unexpected singularities—a marsh-bird choosing the driest possible situation, even hills of considerable height, and covered with forest-timber. I have myself seen two nests so placed; and one of them at least was on ground which, from the charred wood lying about, had evidently been burnt at some former period. They were nearly at the top of long hills, many hundreds of yards from any marshy places, good-sized fir trees on all sides; but they were not in the thickest parts of the forests, and the vegetation on the ground about was very scanty, diminutive heather and such like plants growing thinly amongst reindeer lichen in slight depressions on the ground—placed near some little ancient logs, so nearly buried, however, as to afford no shelter, the bedding only a few dry leaves of the Scotch fir. The bird sits sometimes so close that one is tempted to try to catch it in the hand, its white back conspicuous as it crouches with its neck drawn in. It either gets up direct or runs a short way before it rises; and then it flies round with an occasional *tjeuty*, or stands upon the top of a neighbouring tree, showing the full length of its slender legs, neck, and bill. But it is not till it has young that all its powers of eloquence are fully brought into play: it then comes far to meet any intruder, floating over him with a clear cry that echoes through the forest, or that is heard over a great extent of marsh, or it stands very near one, bowing its head, opening its beak quite wide in the energy of its gesticulations. The eggs, four in number, are of a rich green ground-colour when fresh, or sometimes of a bright brown. This year they were laid hereabouts at the end of May. The young are probably carried into marshy land as soon as they are hatched; for there they are whilst they are still very small. I am told that dry mounds rising out of swamps are sometimes chosen as breeding-places. The nests I have described were found quite by good luck, stumbled upon in walking through the forest, where the bird is scattered usually at rather wide intervals; one may see two or three pairs in the course of a long day’s walk. It is so wary that I have never succeeded in watching it to its nest.” To the above very full account of the nidification of this Sandpiper I can add but little. Mr. Meves, from whom I have received many eggs of this species, informs me that they are usually placed in some open place in the forest, and describes a nest from Kyrö as being merely a depression in a tussock which is overgrown with moss, lichens, and blueberry plants; the inside of the nest is lined with leaves.

The eggs of the Spotted Redshank, of which I possess a series of twenty, collected in

Lapland (some by the late Mr. Wolley's collectors, and others by my own correspondents), differ much from those of the common Redshank, being larger and much more richly coloured. The ground-colour in these eggs varies from dark stone-buff to light buff with a faint greenish tinge, and pale sea-green; and the markings, which consist of pale purplish shell-blotches and dark umber-brown surface-markings, are large and heavy, being either generally distributed about the surface of the egg, or else rather more numerous near the larger end—the latter mode of distribution being most frequent. In size the specimens in my collection vary from  $1\frac{3}{40}$  by  $1\frac{9}{40}$  to  $1\frac{3}{40}$  by  $1\frac{1}{40}$  inch.

The specimens figured are, on the one Plate, the adult bird in full breeding-dress and the young in down, together with *Totanus calidris* in autumn plumage; on the second Plate, a young autumn bird, with a specimen of *Totanus calidris* in summer dress; and on a third Plate I have deemed it best to figure the present species and *Totanus calidris* in full winter plumage, for comparison. Owing to an error on the part of my artist, which could not well be rectified, the summer-plumaged bird of the present species was figured with the autumn plumage of *Totanus calidris*, and the summer dress of that species with the autumn plumage of the present species, instead of the two species in summer dress being on the one Plate, and the same in autumn plumage on the second one. Excepting the specimen of *Totanus fuscus* in winter dress, which was lent to me by Mr. Harting, all the examples figured and described are in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♀. Near Stockholm, August 26th, 1852 (*Prof. Sundevall*). *b*, ♂ *ad.* Near Archangel, May 17th, 1873 (*Piottuch*). *c*, ♂ *juv.* Near Archangel, August 11th, 1872 (*Piottuch*). *d*, *pull.* Muonioniska, Lapland, July 1868 (*Sundevall*).

*E Mus. Howard Saunders.*

*a*, *ad.* Breeding-plumage, N. France? (*E. Fairmaire*). *b*, ♀. Malaga, March 23rd, 1869 (*H. S.*). *c*. Malaga, October 16th, 1872.

*E Mus. J. E. Harting.*

*a*, ♂ *ad.* Winter plumage, Malta (*C. A. Wright*).





GREENSHANK.  
*TOTANUS CANESCENS.*  
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## TOTANUS CANESCENS.

(GREENSHANK.)

- Scolopax totanus*, Linn. Syst. Nat. i. p. 245 (1766, ex Briss.).  
*Cinereous Godwit*, Lath. Gen. Syn. of B. iii. p. 145 (1785).  
*Scolopax canescens*, Gm. Syst. Nat. i. p. 668 (1788, ex Lath.).  
*Totanus griseus*, Beschst. Naturg. Deutschl. iv. p. 249 (1809).  
*Totanus fistulans*, id. tom. cit. p. 241 (1809).  
*Totanus glottis*, id. tom. cit. p. 249 (1809).  
*Totanus chloropus*, Meyer & Wolf, Taschenb. ii. p. 371 (1810).  
*Glottis natans*, Koch, Syst. d. Baier. Zool. p. 305 (1816).  
*Limicula glottis*, Leach, Cat. Mamm. & B. Br. Mus. p. 32 (1816).  
*Glottis chloropus*, Nilss. Orn. Suec. ii. p. 57 (1817).  
*Glottis nivigula*, Hodgs. in Gray's Zool. Misc. ii. p. 36 (1831).  
*Totanus glottoides*, Vigors, P. Z. S. 1831, p. 173.  
*Limosa glottoides*, Sykes, P. Z. S. 1832, p. 163.  
*Glottis floridanus*, Bonap. Comp. List B. Eur. & N. Am. p. 51 (1838).  
*Limosa totanus*, Pall. Zoogr. Rosso-Asiat. ii. p. 183 (1831).  
*Glottis canescens*, Gray, Cat. Brit. Mus. *Grallæ*, p. 99 (1844).  
*Glottis vigorsii*, id. tom. cit. p. 99 (1844).  
*Glottis horsfieldii*, id. tom. cit. p. 99 (1844).  
*Totanus canescens*, Adams, P. Z. S. 1859, p. 169.

*Greenshanks*, *Green-legs*, English; *Teochvingh*, Gaelic (*J. A. Harvie Brown*); *Chevalier gris*, *Chevalier aboyeur*, French; *Pantana*, Italian; *Corre-playa*, *Andario*, Spanish; *Ceu-ceua*, Maltese; *Grünfüssiger Wasserläufer*, German; *Groenpootige Ruiter*, Dutch; *Gluttsnäppe*, Swedish; *Glutsneppe*, Norwegian; *Grönben*, *Hvidsneppe*, *Glutsneppe*, Danish; *Oolit bolschoi*, Russian.

*Figuræ notabiles.*

Gould, B. of Eur. iv. pl. 312; Yarr. Brit. B. ii. p. 549 (1843); Naum. Vög. Deutschl. viii. Taf. 201; Kjærb. Orn. Dan. tab. xxxvi.; Schl. Vog. Nederl. pl. 242; Fritsch, Vög. Eur. Taf. 38. figs. 13, 14; Gould, B. of Gr. Br. pt. xv.

♂ *vern.* suprà cinerascens: pileo summo albo et nigro longitudinaliter striato: collo postico obscuriùs striato: dorsi plumis cinerascens, marginibus albis, parte medianâ plus minusve nigricante, aliquando maculam nigram distinctam formante: scapularibus ut dorsum coloratis: tectricibus alarum brunneis, obsolete albido marginatis, majoribus quibusdam intimis cinereo lavatis, extus brunneo et cinerascens fasciatis: remigibus nigricantibus, primariis minoribus angustè albo terminatis, secundariis dorsalibus pulchrè cinereis fasciis alternatis brunneis nigrisque marginatis, parte medianâ plus minusve nigri-

cante: dorso postico et uropygio purissimè albis, tectricibus supracaudalibus cinerascenti irregulariter transfasciatis: caudâ albâ, pennis duabus mediis pulchrè cinereis margine externo tantum obsoletè cinerascenti fasciato, pennis omnibus reliquis cinerascenti irregulariter vermiculatis: facie laterali magis albicante, genis nigro distinctè striolatis: corpore subtus purissimè albo, mento immaculato, pectore antico lineis parvis nigris notato, pectore laterali distinctiùs maculato: hypochondriis summis irregulariter nigro vermiculatis: tectricibus subcaudalibus albis caudam subæquantibus: plumis axillaribus paullò cinerascenti transversmiculatis: subalaribus albis nigro transversmiculatis: rostro nigricante: pedibus olivaceo-viridibus: iride brunneâ.

♂ *æstiv.* præcedenti similis, sed suprâ nigricans, colore cinerascente absente et plumarum partê medianâ nigrâ per omnem ptilosin extensâ: caudâ albicante, pennis duabus centralibus cinerascenti transfasciatis: subtus albicans, mento nigro punctulato: gutture et pectore antico ubique maculis subovatis distinctis notatis: hypochondriis distinctiùs transversmiculatis: subcaudalibus albis, cinerascenti medialiter striolatis: plumis axillaribus distinctè transversmiculatis.

♀ *mari* similis, paullò minor.

♂ *autumn.* præcedenti similis sed magis cinerascens: plumis dorsalibus albido plus minusve distinctè marginatis: remigibus extus paullò rufescenti tinctis: caudâ albâ, irregulariter cinerascenti transversmiculatâ, pennis duabus centralibus versus apicem rufescentibus distinctissimè brunneo transfasciatis: subtus omninò albus, gutture imo et pectore summo fasciis obsoletis cinerascentibus transversmiculatis: plumis axillaribus albis.

♀ *hiem.* pulchrè cinerascens, dorsi plumis albo marginatis, scapis nigro indicatis: pileo albo et nigricanti conspicuè lineato, fronte omninò albicante, lineâ nigrâ a basi rostri ortâ nigricante: secundariis extus albido et cinerascenti transfasciatis: rectricibus duabus centralibus pulchrè cinerascentibus basin versus nigro irregulariter transnotatis: subtus omninò albicans.

*Adult in spring plumage.* Head and neck pale ashy grey, the centres of the feathers blackish and the margins white, giving a striped appearance; lores and sides of the head more distinctly white, striped with blackish, ear-coverts greyish, and the stripes on the cheek smaller and of a deeper black; feathers of the back ashy grey with white margins, the centres of the plumes black, this being confined in some to the shaft alone, in others extending over the greater portion, so that the whole back is mottled with black; scapulars grey like the back, edged with white, mottled with black; wing-coverts brown, with very faint white edgings, some of the greater coverts more distinctly margined with white, before each of which white lines appears a narrow one of brown; quills blackish, with dark brown shafts, excepting the first primary, which has the shaft white, some of the smaller primaries tipped with white, secondaries ashy-grey distinctly tinged with bluish grey, the outer web chequered alternately with brown and grey marks, some of the innermost ones black in the centre of the feather like the back; at the base of the first primary a tiny quill black, but distinctly edged with white; lower part of the back and rump white; upper tail-coverts also white, irregularly crossed with greyish zigzag bars; tail white with more or less distinct bars and zigzag markings on all the feathers, excepting the two centre feathers, which are bluish-grey with a slight reddish tinge, vermiculated slightly near the base; under surface of the body white, the chin unspotted, but the throat and fore part of the breast dotted all over with more or less distinct black markings, on some of the feathers confined to a narrow shaft-stripe, on others forming a nearly complete oval spot; flanks exhibiting here and there an indistinct zigzag bar; under tail-coverts pure white; under wing-coverts white, everywhere covered with pointed greyish zigzag bars;

bill blackish; feet olive-green; iris brown. Total length 14·5 inches, culmen 2·3, wing 7·7, tail 3·8, tarsus 2·3.

*Adult in summer plumage.* The black markings which are seen here and there on the upper surface of the spring plumage have now extended over the entire feather, while the white margins to the plumes have disappeared, so that the head and back look much darker; by the same process, also, the wing-coverts are much darker, being now blackish brown; the two centre tail-feathers are also ashy grey, with cross-barrings extending nearly all over the feather; the throat is dotted with little black specks, and the breast is thickly covered with oval black spots; the flanks are more plainly marked with zigzag bars, and the under tail-coverts are streaked down the centre with blackish shaft-stripes; axillary plumes crossed with greyish-brown zigzag lines.

*Autumn plumage.* Rather blackish on the upper surface, but not so dark as in the summer, as the plumage is now beginning to show the white edgings which mark the advent of the winter dress; the wing is also more distinctly chequered on the outer margin, and all the edgings to the feathers have a slight tint of buff pervading them; the tail is very different at this season of the year, the two middle feathers being very distinctly banded with zigzag cross-markings; the under surface of the body is entirely white, the remains of the summer dress being apparent in a greyish shade which overspreads the upper part of the chest, while on the sides of the latter are a few streaks forming more or less regular lines of black; axillary plumes quite white.

*Adult male in winter plumage.* Above pale ashy grey, with here and there a shade of bluish grey, the latter being more apparent on the innermost (that is to say, the longest) secondaries; all the feathers of the upper surface more or less broadly edged with white, before each of which margins a line of blackish brown is seen; some of the scapulars chequered on the outer web with alternate bars of ashy and brown; the head whitish, with lines of black on the hinder part of the crown; the forehead nearly pure white, the lores and a line of feathers down the centre of the forehead dusky black; the sides of the face whitish, the cheeks nearly pure white; the tail white, with irregular zigzag markings, the two centre feathers ashy grey with a very strong tinge of bluish grey, white at the tip with indications of a few cross bars near the base of the feather; the entire under surface of the body pure white, as also the axillary plumes; under wing-coverts whitish with more or less distinct zigzag cross markings.

*Obs.* The changes of plumage in the Greenshank at the four different seasons of the year are well marked. In winter it is pure white underneath, and clear ashy-grey above. In April it begins to show traces of breeding-plumage, the feathers of the back exhibiting signs of approaching black, while the under surface is also spotted here and there with black on the upper part of the breast. By June the bird is in full breeding-dress, very dark on the upper surface, and all the fore part of the throat and breast thickly covered with oval spots, while the flanks and under tail-coverts are also marked with blackish. By the end of July the bird begins to change, and in August rapidly passes into a somewhat lighter dress, assuming buffy-white edgings to the feathers of the upper surface, while the underside of the body is quite white, excepting slight remains of dark markings on the fore part of the breast; at this season of the year the tail is very different, the centre feathers being distinctly barred, whereas at all other times they are more or less uniform grey with indications of bars only on the basal part of the feathers.

A young bird in down, from Torneå, Lapland, measured 153 mm. in length, bill 19 mm., tarsus 32 mm., middle toe 32 mm. Upper parts black and grey, with reddish tinge; forehead, sides of head, and whole underparts white; a streak through the eye, a fine line along the forehead, a larger spot on the crown,

a few lines or spots over the arm, sides of rump, and tail-down black, often mixed with reddish down (*W. Meves, in epist.*).

THE Greenshank is a summer visitant to Europe, and at this season spreads over the whole of the Palæarctic Region, breeding principally in the northern portion. In the autumn it flies to more southern latitudes, and is found in winter throughout the Malay archipelago, extending into Australia, and is also common in South Africa at this period of the year. It is also said to visit South America, but apparently not in such large numbers.

In Great Britain it is found in considerable profusion during the spring and autumn migrations. It breeds in Scotland, but has not yet been known to do so in Ireland. Mr. A. G. More writes as follows:—"Breeds in small numbers in the counties of Perth and Argyle (*Mr. R. Gray*), Ross (*Mr. W. Dunbar*), Sutherland (*Mr. Selby*), Caithness (*Mr. W. Dunbar*). Macgillivray was the first to discover the nest in the Outer Hebrides, where it has since been found by other observers." The Duke of Argyll has given the accompanying note to Mr. Gould's 'Birds of Great Britain':—"The Greenshank comes to our shores in Argyleshire and on the Clyde rather earlier than the Redshank, but in much smaller numbers. It is often solitary, seldom more than one pair together. It is very shy, and emits a loud piping note at frequent intervals; its alarm-note is loud and vociferous. Its habits are extremely more active than those of the Redshank, in its search for food, along the margins of the ebb. I have never seen it, except on the shore of the deep arms of the sea. Its flesh is excellent, far superior to that of the Redshank."

We are likewise indebted to our friend Mr. J. A. Harvie-Brown for a very interesting account of its breeding in Sutherlandshire, which will be found detailed below. He writes to us:—"This species is very generally distributed over the county of Sutherland, and extends southward into Rosshire, Invernesshire, West Cromarty, more sparingly into Perthshire and Argyleshire, north-eastward into Caithness, and is also found during the breeding-season in Skye and in the northern half of the Outer Hebrides. In Dumbartonshire and Stirlingshire no nests, that we are aware of, have been found belonging to this species; but individuals have not unfrequently been observed during the summer months on the shores of Loch Lomond. In autumn they are found but very sparingly on the shores of the Firth of Forth, and on other parts of the coast."

Mr. A. W. M. Clark Kennedy has sent us the following from his note-book:—"Although not by any means a common bird in the eastern counties, this species is an unfailing visitor in spring and autumn to most of the large marshes which border the tidal rivers; and the months of May and September seldom pass without some being shot or seen near Aldborough, in Suffolk, where I have examined several specimens in the flesh, which fishermen had killed while feeding on the mud-flats between Orford and the above-named place. I have many times seen small companies of Greenshanks in Thorpe mere, a large fen of some thousand acres about a mile to the northward of Aldborough, and a place where many very scarce birds of the wading tribe have been procured."

Mr. J. H. Gurney, jun., also writes to us:—"As its occurrence in midwinter seems extremely rare, it may be worth mentioning that my brother has one which was killed in January, and two are stated in the 'Zoologist' (p. 2537) to have been got in January and December—one near Oxford and one in Berkshire."

In Scandinavia it breeds more plentifully, and is everywhere tolerably abundant during the spring and autumn migrations. Our friend Mr. A. Benzon, of Copenhagen, informs us that "in Denmark it is common, occurring either singly or in flocks, on its southward migration from the early part of August to the middle of September, seldom earlier or later; on the other hand, it is seldom seen in the spring, and then only singly, flying high up in the air. According to Fischer's experience in Jutland, this bird swims remarkably well; and as he shot a young female which had still remains of down in her plumage, he supposes that it breeds there. Kjærbølling positively (!) states this to be the case." Mr. R. Collett writes to us:—"The Greenshank occurs near Christiania rather numerous during the migrations, more so, however, in the autumn. They arrive a little after the middle of May, and occur in small flocks of from five or six individuals, but are so shy that it is scarcely possible to get within gunshot of them. On the Fells they breed not uncommonly, and appear again down here about the middle of August, when they are found in larger flocks than in the spring. They leave us in September." According to Nilsson it is commoner in the northern than in the southern parts of Sweden. Mr. Meves says:—

"Late in July a few were found near Ottenby, where a female was shot. They do not seem to breed on Öland, but certainly do so on Gotland. Its true habitat, however, is Northern Sweden, Luleå, and Torneå, Lapland." An interesting account of its nesting habits in Gotland, by Herr Ludwig Holtz, will be found given below. The late Mr. Wheelwright observed it in Lapland, where it arrived early in the spring and left early in the autumn. In Finland Dresser found the Greenshank very abundant during the time of migration, and discovered them breeding near Uleåborg, though the chief body appear to pass further north or more inland. He also procured the eggs from Ijä, a little to the north of Uleåborg, where a few appear to breed annually.

All over Germany it is common during migration, but in the low countries is not so abundant. Schlegel says that in Holland it arrives from the north early in August, and occurs but sparingly. De Selys Longchamps writes:—"Rare in Belgium during migration. An individual has been killed on the Geer in July." In Luxembourg, De La Fontaine says, it occurs irregularly on its spring and autumn migrations. Godron gives it as "rare in Lorraine, only occurring as a bird of passage, when it is met with on the borders of the rivers." Kræner states that in Alsace it is a bird of passage in the autumn. MM. Degland and Gerbe write:—

"It occurs regularly during migration in France. About the middle of July they commence to appear near Dieppe, but are not seen near Dunkerque and Lille before September and October. They repass late in April."

MM. Jaubert and Barthélemy-Lapommeraye also give the same details as to its regular occurrence in the south of France during migration.

Bailly states that the Greenshank is a regular migrant in France in spring and early in the autumn, appearing at the same time in Switzerland and Savoy. In Savoy it generally arrives in April or early in May, and returns again on its southward migration in September, or sometimes even as early as August.

Mr. Howard Saunders says that in Spain it is abundant in the marshy districts, especially in those of the Guadalquivir, below Seville, where he observed it up to the third week in May. In

April 1865 Lord Lilford saw it in the Manzanares, near Madrid. Major Irby records it as "occasional in winter in both Andalucia and Marocco, but not in any numbers; seen as late as the 22nd of May, 1869." In Portugal, Professor Barboza du Bocage says, it is common in winter. In Algeria it only occurs during migration, according to Loche. From Madeira Mr. Vernon Harcourt has recorded it. Mr. Wright says that in Malta it "arrives in March and September, and is seen occasionally in June, July, and August, also in April and May." In the Balæaric Islands von Homeyer met with it; and in Sardinia Count Salvadori records it as occurring in autumn and winter, but it is not common. The same gentleman writes to us:—"This bird is not abundant in Italy; but stragglers are found here every season, more frequently, however, during the spring migration. It frequents the banks of rivers and ponds." Dr. Giglioli, writing from Pisa, says that he has seen it in that neighbourhood in February, and it is said to stay the winter there. Malherbe says it arrives in Sicily at the same time as the Ruff. Von der Mühle writes:—"From September to May it is not uncommon on all the swampy meadows bordering the coasts of Greece," and Lindermayer observes:—"During the æquinoctial gales considerable numbers come to our shores, and remain long with us, so that we may infer that its breeding-haunts are not far distant. During the winter months many remain on the islands of the Archipelago. They are less numerous on their migration back in September." Lord Lilford says it occurs in small numbers in Epirus and Corfu in winter and early spring. Messrs. Elwes and Buckley, in their paper on the 'Birds of Turkey,' remark:—"We observed the Greenshank several times, but never more than two or three together." Mr. Robson sends us a note:—"This species is scarce in Turkey, in Asia, and Europe; a few odd birds are shot in the spring and autumn migration, and single specimens obtained at intervals by sportsmen during the winter. They are found by the sides of rivers and in the neighbourhood of lakes." Dr. Otto Finsch says it is found nesting in the Balkans.

At Smyrna it was observed by the late Mr. Strickland in winter, where it was rare. From Trebizond it was sent by Mr. Keith E. Abbott. In Southern Russia von Nordmann says it is "only found during the spring and autumn migrations. The first arrive here in the month of March." Eversmann procured it on his journey to Bucharra and during his travels in Southern Siberia. Dr. Radde found it during the autumn migration at Kulussutajefsk, but says that it certainly does not pass the Tarei-nor on its migration northward in the spring. The following is the record of Dr. von Middendorff:—"Not seen in the north. Breeds commonly on the western slope of the Stanowoj mountains (on the 12th of May on the lakes of Markolj). From here it was often observed on all the large morasses in the mountains, and also on the sea-coast, and settled, making a great outcry, on the tops of the low trees on the edge of the morasses. I last saw it late in August near the mountains bordering Mantschuria." Dr. L. von Schrenck states that this bird was generally procured on the Amoor in the late summer, being then in immature plumage. Steller procured it in Kamtschatka and the Kurile Islands.

The Leiden Museum has a specimen collected by Bürger in Japan. Mr. R. Swinhoe says that it is general in China in winter; and in the account of his late visit to Hainan he writes:—"Often seen and many shot. On the Hoehone marsh in flocks of thousands. One specimen bagged had the underparts stained pink; it had probably been paddling about in the slough from some dyeing-establishment. The Chinese in Hainan often stain their white poultry with

this colour." He has also obtained it in Formosa. Dr. Jerdon writes:—"The Greenshank is to be seen in every part of India, usually alone, now and then in small parties. It chiefly frequents the edges of rivers, tanks, or pools, but is now and then put up from an inundated rice-field, or low swamp. It rises with a loud shrill cry, which the native name (Timtimma) attempts to imitate. It is excellent eating; as Pallas remarked, 'sapidissima avis in patina.' It reaches this country towards the middle or end of September, and leaves for the north in April." Major Irby, writing on the birds observed by him in Oudh and Kumaon, remarks as follows:—"Seen singly and in flocks of up to thirty in number; is most numerous during the cold season; but is occasionally seen during every month throughout the year." Captain Bulger procured it at Rabat, in Sikkim, and Hodgson in Nepaul: it is also known to occur in Ceylon and the Nicobars. The Greenshank also seems to be met with all over the Malayan region, specimens being in the Leiden Museum from the Philippines, Borneo, Java, Timor, Gilolo, and Celebes. Mr. Gould writes: "Although nowhere very abundant, it is so generally dispersed over Australia that I have seen specimens from every settlement in that vast portion of the globe; but, although its distribution is so general, its presence is not, I believe, to be depended upon in any given locality; it is, in fact, a chance but not unfrequent visitor to all. A more elegant bird on the sands can scarcely be imagined; and it is as graceful in all its actions as it is in form, tripping over the beach with a lightness and ease peculiar to itself. It sometimes leaves the sea-side for estuaries and inland lakes; but these localities are not so favourable to its habits as sandy points and spits of land on the sea-shore, where it is frequently seen in company with the Whimbrel, Curlew, and Oyster-catcher. It is sometimes seen in small flocks, of from seven to ten in number, but more frequently in pairs." Herr von Pelzeln records it also from Norfolk Island.

Having traced the range of the Greenshank in a south-easterly direction, it remains to examine the habitat of the bird in South-eastern Europe and Africa. By Canon Tristram it was observed in Palestine. Captain Shelley also states that he found it abundantly throughout Egypt and Nubia; and Mr. Clark Kennedy sends us the following note:—"I met with this bird on the Nile from Cairo up to Edfou, but south of that town to the first cataract it entirely disappeared; and though often observed on the banks of the river and flying up and down muddy ditches, it was always to be seen either in pairs or very small companies, and certainly could not be called a numerous species. It might sometimes be found feeding and associating with Curlews and other waders, especially the 'Zic-zac,' or Spur-winged Plover, but it was always fully as shy a bird as it is in this country. In March 1870 I saw one pair on the Suez Canal." Dr. von Heuglin says it is found in winter on the Red Sea and the Somali coast, not in summer, and he also met with it in Kordofan. Mr. C. W. Wyatt obtained specimens on the marshes near Tor, in the Peninsula of Sinai. Captain Sperling met with it at Zanzibar and Mosambique, in the latter of which countries it was also obtained by Professor Peters. Mr. Ayres sends the following note from Natal:—"These birds are very shy, and are mostly gregarious, but sometimes solitary. They generally feed and intermix with the Curlews, frequently walking into the water till it reaches their bodies. The specimens sent seemed to have the remains of shrimps in their stomach." Mr. Edward Newton has seen it in the Seychelles. Mr. Layard says that in the Cape Colony it is "common along with the Green Sandpiper, and found also on all vleys throughout the country." It has been met with from Gaboon to Senegambia on the west coast, having been likewise pro-

cured on Prince's Island by Dr. Dohrn. A specimen shot on the Gold Coast on the 13th of September 1868 fixes the date of its sojourn in West Africa.

We do not consider its claim to admission into the American avifauna rests on very good grounds. Audubon had procured a specimen from Florida; and the Leiden Museum has examples said to be from Buenos Ayres and Chili.

The following account of its breeding in the Hebrides was given by the late Professor Macgillivray:—

“In the outer Hebrides it is seen early in summer, and generally departs in October, although I have seen individuals there in November. Previously to the commencement of the breeding-season, and after the young are fledged, it resorts to the shores of the sea, frequenting pools of brackish water at the head of the sand fords, and the shallow margins of the bays and creeks. Its habits are very similar to those of the Redshank, with which it associates in autumn. It is extremely shy and vigilant, insomuch that one can very seldom shoot it, unless after it has deposited its eggs. Many individuals remain during the summer, when they are to be found by the lakes in the interior, of which the number in Uist, Harris, and Lewis is astonishing. At that season it is very easily discovered; for when one is perhaps more than a quarter of a mile distant, it rises into the air with clamorous cries, alarming all the birds in its neighbourhood, flies round the place of its nest, now wheeling off to a distance, again advancing, and at intervals alighting, by the edge of the lake, when it continues its cries, vibrating its body all the while. I once found a nest of this bird in the island of Harris. It was at a considerable distance from a small lake, and consisted of a few fragments of heath and some blades of grass, placed in a shallow cavity scraped in the turf in an exposed place—that is, on a slight eminence covered chiefly with moss, lichens, some carices and short heath. The nest, in fact, resembled those of the Golden Plover, Lapwing, and Curlew. The eggs, placed with their narrow ends together, were four in number, pyriform, larger than those of the Lapwing, and smaller than those of the Golden Plover, equally pointed with the latter, but proportionately broader and more rounded at the larger end than those of either. The dimensions of one of them, still in my collection, are two inches exactly by one inch and three eighths. The ground-colour is a very pale yellowish-green, sprinkled all over with irregular spots of dark brown, intermixed with blotches of light purplish grey, the spots, especially the blotches, more numerous on the larger end. Although in summer these birds may be seen in many parts of these islands, they are yet very rare, a pair being to be met with only at an interval of several miles. In ordinary circumstances, the Greenshank searches the shores in muddy places for food, often walking out into the water until it reaches nearly to the tarsal joint; it generally advances with rapidity, running rather than walking, and almost continually vibrating its body. On being disturbed, it stands with upraised neck and with a succession of loud and shrill cries, and, though there should be little danger, flies off to a distance. Its flight is rapid, gliding and devious; and it alights abruptly, runs to some distance, stands and vibrates. Its food, no doubt, consists of worms and small shells; but I have neglected to take note of the contents of the stomach of the few individuals which I have examined.”

The late Mr. Wheelwright, in his ‘Spring and Summer in Lapland,’ has published the following observations:—“Arrived up here among the earliest in the spring and certainly left the earliest in the autumn. As I had a good opportunity of studying the habits of this bird in the

breeding-season, I was much struck with its resemblance to the Green Sandpiper. The wild nature of the bird, its loud shrill cry, *chee-wheet, chee-wheet*, as it dashes through the air with the speed of an arrow, and its partiality for woodland lakes and streams, all prove that it is more closely allied to the Green Sandpiper than any other of the genus; and, save that I always took the eggs from the ground, the habits of the one bird seem exactly to resemble those of the other. "The eggs of the Greenshank are often laid far away from water. I took a nest once upon a stony rise right in an open forest, about one hundred yards from a little beck, laid on a thin layer of leaves. The eggs, always four in number, are very large and pyriform . . . . . I observed, as soon as the young were hatched off, the old birds would lead them down to some grassy swamp in the forest; and I have met with three or four families in the same spot. It is now that the wild cry of this bird is heard to perfection if you enter the swamp with a dog; and it is a pleasing sight to see how little fear the old birds display in endeavouring to beat the intruder from the spot. No trying to allure him away by false pretences, as the Lapwing and many other birds do, but a downright courageous attack, which never ceases till the dog is fairly beaten off. I have often seen the Greenshank settle on a tree."

Mr. J. Edmund Harting, who is specially devoting his attention to wading birds, writes concerning the present species:—

"The Greenshank is a very wary bird, and difficult to approach, except under cover; but I have sometimes put one up within shot from a salt marsh where the herbage was pretty tall and thick. On one occasion, under shelter of a sea-wall, I was enabled to get pretty close to three Greenshanks that were feeding on a mud-flat; a peculiarity that I remarked in their manner of feeding was, that they placed the bill upon the surface, the under mandible almost parallel with the mud, and as they advanced scooped from side to side, after the fashion of the Avocet, leaving a curious zigzag line impressed upon the mud. The food consists of small mollusks and beetles."

We have translated the subjoined notice of the Greenshank from the recently published work on the birds of Borkum by Baron Droste-Hülshoff:—

"In general those birds which arrive first in the autumn are lean, and the later arrivals very fat. To this may be owing the fact that in the latter part of the migration the Greenshank seldom leaves shallows. At ebb-tide it goes from puddle to puddle, and feeds on shrimps and fish-fry, which abound in these waters. The rising tide brings fresh supplies of similar food, as they then leave their hiding-places and spread over the pools and shallows. Wherever the shallow water trickles away, this lively wader is found fishing. They become, however, lazier when the sand-worm colonies are flooded; for the shrimps do not come up to the sandy barren parts. Until the sea again recedes this bird has a term of rest, though not real rest, for it is still on the move. In the early part of the season of migration it proceeds regularly upwards, wherever it finds feeding-places, being generally found following the rivulets from place to place up to the green parts; and at flood-tide they fly restlessly about, visiting the freshwater ponds and pools. It prefers, however, the open places, and is therefore seldom found in company with *Totanus glareola*, which inhabits overgrown swamps. On the other hand, like the Curlews, it often visits the meadows, and searches amongst the cow-droppings for food. In July and August I observed it on the inner dunes, where *Ononis reptans*, *Salix argentea*, *Lotus corniculatus*, and *Cariceæ* take the place of the true dune-grass. They were then catching beetles in their usual lively manner, jumping

and picking at the tops of the grass-bents, sometimes flying up and catching at something, taking a short flight with extended wings, and again settling. At this time countless myriads of *Phyllopertha horticola* filled the air above all the edges of the inner dunes, and quantities of Black-headed Gulls were busy catching them. On examining the places where I had observed the Greenshanks, I noticed quantities of *Cneorhinus geminatus* on all the grass-stems."

Herr Ludwig Holtz observed the Greenshank breeding on Gottland; and we translate his notes as follows:—"I found the nest on the 20th of May, situated where I should never have expected to see it, in a place overgrown with scattered Fir-trees (*Pinus sylvestris*), from ten to twenty feet high. The limestone had formed small hillocks, which were covered here and there with moss, weeds, and straggling plants of *Calluna vulgaris*. On one of these hillocks, between two pieces of limestone, I found the nest, which was a mere indentation in the bare ground, with some spines of the Pine for a foundation; and on these were heaped a few twigs and leaves; here the four eggs lay, with their points turned inwards. The eggs contained small embryos." Mr. Meves writes:—"A nest from Kyrrö consists of a lump of reindeer- and other moss, mixed with leaves of willow and stagberry bushes. The eggs are four in number." . . . . .

To our friend Mr. J. A. Harvie-Brown we are indebted for the following account of its breeding in Scotland:—

"In Sutherlandshire we have had most opportunities of observing the habits of this species during the nesting-season. The cry of the Greenshank, from which, in that country, one of its local names ("Teochvingh") is derived, somewhat resembles that of the Redshank (*Totanus calidris*), but is clearer, louder, and more slowly uttered. Even around their breeding-haunts the Greenshank is a shy, wary bird; and the nest, in consequence, is generally extremely difficult to find. The male bird is even wilder than the female, and if once fired at ineffectually will not come near enough again that day; and this remark applies even when the birds have hatched their young.

"When flying overhead or at some distance from the ground the cry is slow and clear; but when the bird is in the act of alighting, with the wings raised above its head, it repeats the notes with greater rapidity, much in the same way as the Common Sandpiper (*Actitis hypoleucos*) may be observed to do soon after its arrival in spring. The flight is rapid, sustained by strong, regular beats of the wings, which apparently are made to keep time with each syllable of the note.

"The Greenshank, according to our experience in Sutherlandshire, begins to lay about the 10th May, though other observers in other countries consider it amongst the earliest breeders of the Grallatores. We have in our collection one nest of eggs taken on the above-mentioned date; but of many others we have seen or received very few have been obtained so early. The nest is simply a depression in a dry tuft of grass in the middle or by the side of marshy ground, or by a loch-side, sparingly lined with dry wiry grass."

Naumann gives the following account of its food:—"Feeds on water-insects, both larvæ and also the perfect insect. It hunts the larvæ up out of the mud, and runs after the more active insects of the genus *Harpalus* along the shore, and catches the smaller ones of the genus *Dytiscus* in shallow water, and picks, apparently with great zest, the shining *Gyrinus* off the surface of the water." He also states that he has observed it "on meadows a short distance from the water, where cattle had been grazing, catching small beetles, such as *Aphrodus inquinatus*, *A. conspurcatus*,

*A. conspectus*, &c. It often catches tadpoles, and has been found to have a small frog (*Rana esculenta*) in the stomach. Fish and frog-spawn it also devours, but not often; and the same is the case as regards small water shell-fish; but they often swallow small stones and sand. They also eat common lob-worms and small fishes."

The beautiful pear-shaped eggs of this wader have the ground-colour pale buffy white or stone-colour, the underlying shell-markings dull purplish-brown, and the overlying surface-blotches rich bright dark brown. These markings are generally distributed over the surface of the egg; but sometimes the egg has large blotches here and there, and the rest of the surface is comparatively little spotted. In a series of twenty eggs, now before us, out of Dresser's collection, collected by himself in Northern Finland (Pudasjärvi), by Meves at Archangel, and by Wolley's collectors at Muonioniska and Torneå, Lapland, they vary in size from  $1\frac{3}{40}$  by  $1\frac{1}{40}$  of an inch to  $2\frac{4}{40}$  by  $1\frac{12}{40}$ , and 2 inches by  $1\frac{14}{40}$ .

The different changes of plumage in the present bird are described from the following specimens:—The spring dress from an example in the collection of Mr. J. H. Gurney, jun., purchased in Leadenhall Market on the 6th of April 1871. The birds illustrating the other stages are in our own collection, as follows:—a breeding female from Enare, Lapland, shot on the 13th of July 1847, and given to us by Professor Sundevall; the autumn bird, shot at Pagham Harbour by Sharpe in August 1870; and the winter bird obtained from the Knysna district of the Cape Colony. The colour of the legs seems to vary considerably with the season of the year. One killed by Mr. Ayres in Natal had the "eye dark brown, the legs and bill light slate-colour;" and Mr. Swinhoe gives the following description of an "adult shot on the 4th of September 1861, in Formosa":—"Length  $13\frac{7}{10}$  in.; wing 7; tail 3. Bill along culmen  $2\frac{3}{10}$  in., to gape  $2\frac{4}{10}$ . Apical half of bill blackish brown; basal half leaden-grey. Ear-covert as large as the eye, dark purplish grey; operculum with an oval slit running obliquely through more than half its diameter. Iris dark umber. Legs and toes light ochreous grey, patched with ochre on the toes and dark leaden-grey at their joints; claws deep brown."

In the preparation of the above article we have examined the following specimens:—

*E Mus. Sharpe and Dresser.*

- a.* Pagham, Sussex, July 1870 (*R. B. S.*). *b, c, d.* Pagham, August 1870 (*R. B. S.*). *e.* Pagham, September 1870 (*R. B. S.*). *f.* Guldbrandsdalen, Norway, July 9th 1864, shot from the nest (*R. Collett*). *g.* Enare, Lapland, July 13th 1847 (*C. J. Sundevall*). *h.* Natal (*Ayres*). *i, j.* Knysna, S. Africa (*Cutter*).

*E Mus. J. H. Gurney, jun.*

- a.* Leadenhall Market, April 6th 1871 (*J. H. G.*). *b.* Newgate Market, September 1868 (*J. Gatcombe*). *c.* Great Cotes, August 18th 1868 (*J. Cordeaux*). *d.* Yarmouth, August 16th 1868 (*Gunn*).

*E Mus. H. B. Tristram.*

- a.* Pylos, Greece, February 13th 1858 (*H. B. T.*). *b.* Plain of Acre, November 12th 1863 (*H. B. T.*).



## Genus MACRORHAMPHUS.

*Scolopax* apud Gmelin, Syst. Nat. i. p. 658 (1788).

*Totanus* apud Sabine in Frankl. Journey, Appendix, p. 41 (1823).

*Limosa* apud Say in Long's Expl. Rocky Mts. ii. p. 170 (1823).

*Macrorhamphus*, Leach, Syst. Cat. M. & B. Brit. Mus. 31 (1831).

*Limnodromus* apud Lembeye, Av. de la Isl. de Cuba, p. 91 (1850).

THIS genus contains only one, somewhat peculiar species, which in general form, and especially in that of the bill, resembles the Snipes (*Gallinago*), but in habits and in the webbing of the feet is closely similar to the Totanidæ, and in its changes of plumage, being rufous in the summer and grey in winter, resembles the Godwits and *Pseudoscolopax semipalmatus*, a species inhabiting the Eastern Palæarctic and Oriental Regions.

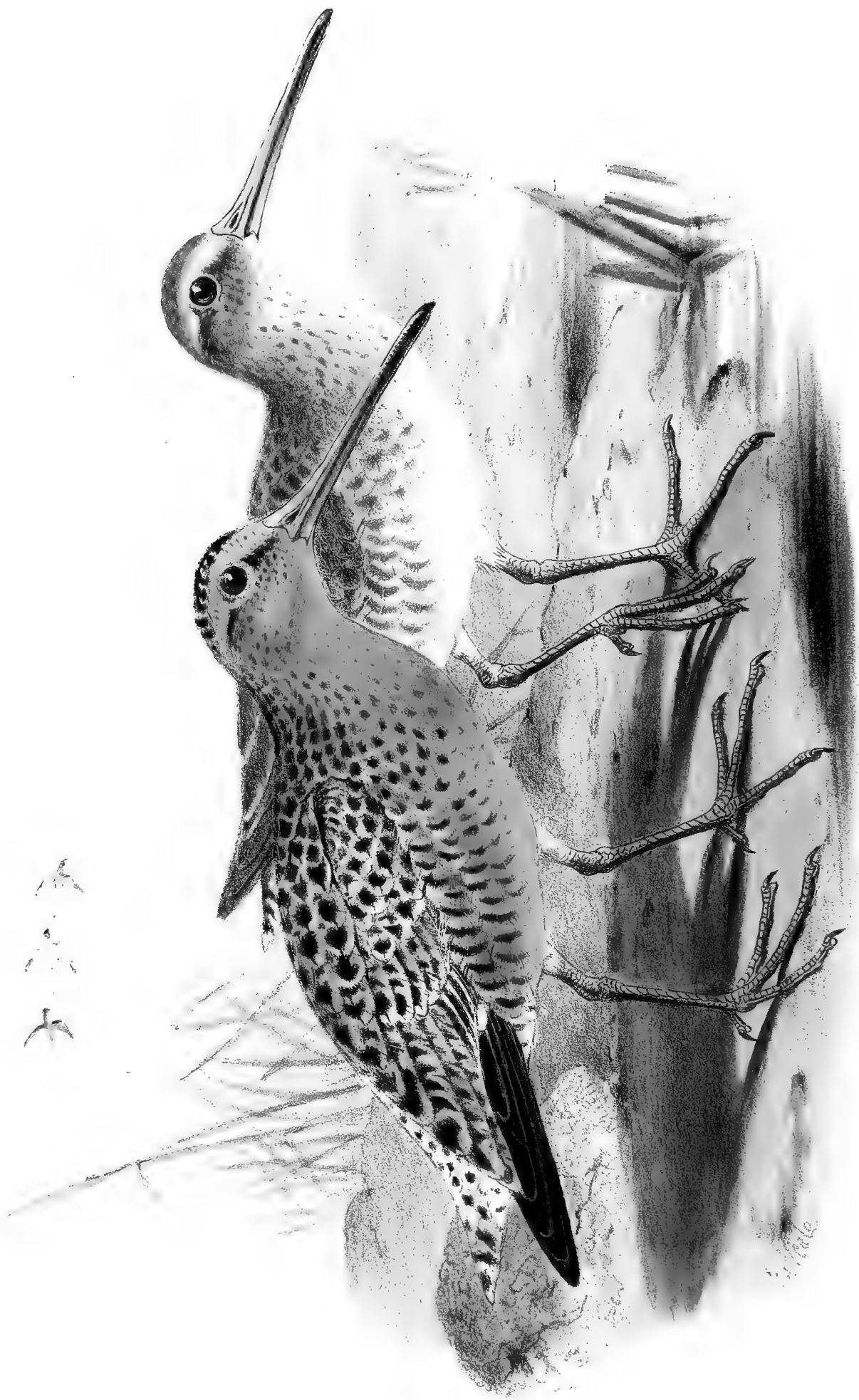
The genus *Macrorhamphus* is a Nearctic and Neotropical one, being only known as a straggler to the Old World.

In habits the single species belonging to this genus comes near to the Sandpipers, frequenting the same localities as they do, and frequently consorting with them. It is usually seen in larger or smaller flocks, and obtains its food on the borders of pools and ponds, or on mud-flats and damp meadows, frequently probing in the soft soil for the aquatic insects, worms, and mollusks on which it feeds. When compelled to take to the water, it swims with ease; and it frequently wades far into the water in search of food. Its call-note resembles that of the Sandpipers. Its nest is a mere depression in the ground or moss, scantily lined with leaves; and its eggs, four in number, are said to resemble closely those of some of the true Snipes.

*Macrorhamphus griseus*, the type of the genus, has the bill more than twice the length of the head, straight, slender, higher than broad at the base, compressed for more than half its length, depressed, and widening slightly towards the tip; both mandibles grooved nearly to the tip; the terminal portion of the bill with numerous small depressions, like the bill of *Gallinago*; nostrils linear, basal, rather small; wings long, pointed, the first quill longest, the inner secondaries pointed and longer than the fourth primary; tail short, nearly even; legs moderately long, slender, tibia bare for about one third of its length; tarsus compressed, scutellate; hind toe small, slender, elevated, the anterior toes slender, scutellate, slightly emarginate, webbed at the base, the outer web large; claws small, slender, slightly curved, that on the middle toe very slightly dilated on the inner edge.







E. Neale lith.

REDBREASTED SNIPE.  
MACRORHAMPHUS CRISEUS.

Hanhart m.

## MACRORHAMPHUS GRISEUS.

(RED-BREASTED SNIPE.)

- Scolopax grisea*, Gmel. Syst. Nat. i. p. 658 (1788).  
*Scolopax noveboracensis*, Gmel. Syst. Nat. i. p. 658 (1788).  
*Scolopax leucophæa*, Vieill. Nouv. Dict. iii. p. 358 (1816).  
*Macrorhamphus griseus* (Gm.), Leach, Syst. Cat. B. & M. Brit. Mus. p. 31 (1816).  
*Scolopax paykullii*, Nilss. Orn. Suec. ii. p. 106 (1817).  
*Macrorhamphus punctatus*, Less. Traité d'Orn. p. 556 (1831).  
*Totanus noveboracensis* (Gm.), Sabine, Frankl. Journ. p. 687.  
*Limosa scolopacea*, Say, Longs. Exp. Rocky Mountains, ii. p. 170 (1823).  
*Limnodromus grisea*, Lembeye, Av. de la Isl. de Cuba, p. 91 (1850).  
*Macrorhamphus scolopaceus* (Say), Lawr. Ann. Lyc. N. Y. v. p. 4, pl. 1 (1852).  
*Limosa grisea* (Gm.), Schl. Mus. Pays-Bas, Scolop. p. 26 (1864).

*Figuræ notabiles.*

Vieill. Gal. des Ois. pl. 241; Gould, B. of Eur. pl. 323; id. B. of G. Brit. iv. pl. 76; Elliot, B. of N. Am. part v; Nilss. Orn. Suec. tab. xi.

*Ad. ptil. æst.* pileo, collo postico et corpore suprâ nigris ferrugineo notatis: dorso postico albo: uropygio imo et supracaudalibus albis nigro transfasciatis et pallidè ferrugineo notatis: rectricibus centralibus ferrugineis, reliquis albis nigricanti fasciatis: remigibus primariis nigricantibus, secundariis et tectricibus alarum majoribus saturatè cinereis albo marginatis et apicatis: gulâ, gutture et corpore subtùs pallidè ferrugineis, colli lateribus et pectore nigro guttatis, et hypochondriis cum subcaudalibus nigricanti fasciatis: rostro nigro-fusco: pedibus pallidè viridi-fuscis: iride fuscâ.

*Ad. ptil. hiem.* pileo, collo postico et corpore suprâ saturatè cinereis vix fusco tinctis: dorso imo albo, supra-caudalibus et caudâ albis nigro transfasciatis: alis sicut in ptilosi æstivali, sed haud ferrugineo notatis: gulâ et gutture cinereo-albis: corpore reliquo subtùs albo, hypochondriis et subcaudalibus nigricanti cinereo transfasciatis.

*Adult in summer* (New Jersey). Crown, nape, and upper parts generally varied black and rusty red, the feathers being black, edged and barred with rufescent ochreous and rusty rufous; rump and upper tail-coverts white slightly tinged with rufous, and barred with black; central rectrices rufescent ochreous, the outer ones white, all broadly barred with black; primaries blackish, the shaft of the first quill white; short secondaries and larger wing-coverts dark grey, edged and tipped with white; sides of the head, throat, and underparts generally rusty rufescent, becoming paler towards the lower abdomen; sides of the neck and upper flanks spotted with black; lower flanks and under tail-coverts barred with black; under wing-coverts and axillaries white, barred with blackish grey; bill blackish brown; legs light greenish brown; iris dark brown. Total length about 8·5 inches, culmen 2·35, wing 5·7, tail 2·45, tarsus 1·4.

*Adult in winter* (New Jersey). Crown, nape, hind neck, and upper parts generally dark dull ashy grey with a brownish tinge; scapulars rather darker, and the back slightly marked with blackish; lower back nearly white; upper tail-coverts and tail white, closely barred with black; wings as in the summer, but darker and without any trace of rufous; neck and upper breast white, clouded with pale ashy grey; rest of the underparts white, the flanks barred with ashy brownish grey, and the under tail-coverts barred with blackish.

THE present species is essentially an American bird, and has only been met with in the Palæarctic Region as a rare and occasional straggler, most of the occurrences having taken place in Great Britain. Mr. J. E. Harting, in his 'Handbook of British Birds,' enumerates altogether fifteen occurrences in England and Scotland; but of these some are doubtful, as for instance the four stated to have been seen near Newport, Isle of Wight, in 1842, and the one in the Isle of Man in 1847. Those which appear to be reliable are as follows:—One in Scilly, three in Devonshire, two in Middlesex, two near Yarmouth, and one at Horsey, Norfolk, one near Carlisle, and three in Scotland—viz. one near Banff on the 26th of September 1858, one on the Clyde, Lanarkshire, and one near Largo in September 1867.

It was recorded by Nilsson (*l. c.*) as having been obtained in Sweden; but in his later editions he excludes it, and says that it was previously included by mistake. A specimen was sent from Fiskens, in Greenland, in 1824. And it has been more than once obtained in France; for, according to Messrs. Degland and Gerbe, a specimen in winter plumage was killed by M. R. Oursel in the Hoc marsh, near Havre, out of a flock of five individuals, and it has been twice sold in the Paris market amongst other waders sent from Picardy.

In America the present species is very widely distributed. Dr. E. Coues informs me that it is "very widely diffused over the western hemisphere. In most of the United States it is only a bird of passage, appearing in great numbers during passage, especially in the autumn, when it moves more leisurely than in the spring. Its periodical wanderings, like those of most American Limicolæ, are very extensive. While some individuals winter in the more southern States, others pass on into Central and South America, reaching even Brazil and Chili." To this I may add that I found it numerous in Texas and Mexico; Mr. Salvin obtained it in Guatemala; Lawrence records it from Costa Rica and Panama; and Natterer met with it at Para. According to Dr. Gundlach it is also found in Cuba, where it is common from September to April.

I may further add that, according to Mr. L. Taczanowski (J. f. O. 1873, p. 112), the Red-breasted Snipe has of late years been met with in North-east Siberia, northward of Jakutsk.

In habits the present species is much more of a Sandpiper than a true Snipe. I first met with it in a wild state in the lagoons bordering the Rio Grande, where, not having been molested, it was extremely tame, so much so as to permit a very close approach, and I have sat for hours watching this bird and several other waders feeding unconcernedly not above a dozen feet from me. The Red-breasted Snipe was generally seen in flocks of from ten to thirty or forty individuals, and used to frequent the soft oozy shores on one side of the lagoon, avoiding the other side where the grass was tolerably long and bunches of rushes grew here and there. They used to walk along on the soft mud probing like the common Snipe, occasionally wading in the shallow parts of the lagoon, though seldom in places deep enough for the water to reach their bodies. When flushed they rise in a tolerably compact body, and settle also very close

together, remaining thus for a moment or two previous to scattering about in search of food; and it is therefore very easy to get a pot-shot into a flock and knock down quite a number—a mode of proceeding much in vogue with the shore-gunners, who slaughter great numbers of this beautiful bird. On the wing the Red-breasted Snipe is swift, and its flight is powerful and well sustained; but it seldom flies far when disturbed, and more frequently returns to the same place after circling round once or twice. I have frequently shot these Snipe for the table, and found them excellent eating, though scarcely as good as the common Snipe. The food of this bird appears to consist chiefly of small insects, worms, &c.; but occasionally a few seeds are found in its crop. Dr. Richardson states that specimens obtained by him on the Saskatchewan had their crops filled with leeches and fragments of coleoptera.

I am indebted to Dr. Elliott Coues for the following notes respecting the present species:—“I am not aware that breeding birds have ever been found in the United States (exclusive of Alaska). Like the Sandpipers, between which and the true Snipes this species forms, with *Micro-palama himantopus*, a connecting link, the Red-breasted Snipe has a highly boreal breeding-range, of which we have only recently gained authentic advices. The nesting-resorts were only known in a general way to the earlier authors, while the eggs remained, until very lately, unknown. There are now, however, several sets in the Smithsonian collection, taken by Mr. R. Macfarlane in the Anderson-river region, and along the Arctic coast itself, east of that river. These were procured late in June, at which season they appear to have been fresh or nearly so; we have thus the time of laying very nearly. Accompanying labels state that the eggs were placed on a few dried leaves in a slight depression of the ground, in or near marshy tracts. One set has four eggs, another only two; but we may presume that, as usual in this group, the former is the ordinary nest-complement. The eggs are not peculiar in any respect; and probably no description, however minute, would suffice for their absolute discrimination from some of their allies. They are much as in *Gallinago*, showing the same ground-colour with all its variability in tint, while the *pictura* is identical, even to the sharp black tracery over the ordinary blotches. One specimen has the markings rather chocolate than umber-brown, and smaller and more diffused than I find them to be in any samples of *Gallinago* before me. An unusually long, narrow, and pointed specimen measures  $1.75 \times 1.15$ , a short one  $1.55 \times 1.10$ ; an average is about  $1.62 \times 1.12$ . Mr. W. H. Dall has left a record of nidification in Alaska, he having found a nest June 3rd, and secured the parent with the eggs on the 6th. ‘The nest was a simple hollow in the ground, in a grassy “hummock,” in the centre of a marshy spot, with scarcely any lining whatever—nothing in the shape of a nest to bring away. The female, when startled from the nest, shuffled off with great rapidity among the grassy hummocks, making a very difficult mark to shoot at.’

“Although the breeding of this bird is highly boreal, as said, I should not be surprised if it were yet found nesting on or near our northern border. Our Maine writers speak of the species as a ‘summer visitor;’ and Dr. Geo. Suckley refers to individuals *supposed to be* breeding in Washington territory in May. In the autumn the earliest period at which I have myself seen the bird in the United States was the first week in August, this was on the northern boundary of Dakota; and the evident youth of the specimens secured led me to infer that they were hatched not far off, if not, indeed, in the immediate vicinity. The full migration is not, however, fully established until September, during which month untold thousands enter the

United States from the north, and soon become generally dispersed. Many still retain traces of the summer texture, in reddish feathers on the underparts, and especially in scattered black and bay plumes on the back; but these soon fall, and by October the clear grey and white winter dress is perfected. In the spring many or most individuals gain a nearly perfect plumage before they leave us. The vernal migration is performed with much greater celerity than that of the autumn. In the latter season few of our smaller waders are more abundant in suitable resorts, and none are more generally distributed over the country. Thousands proceed along either coast, following the sinuosities of the sea-line, mixing with various allied species on the sandspits and mud-bars of all the estuaries, while as many more migrate inland along the larger watercourses. In the autumn, particularly, they become extremely fat, and offer the sportsman almost irresistible attractions.

“But I have myself little fancy for field-sports which do not exercise the skill, vigour, and perseverance of which the true sportsman is justly proud. These birds may become somewhat wary in populous districts where they are much hunted; but the reverse is the case in the wild, unfrequented regions in which most of my experience with them has lain. Not even the heedless and confiding little Sandpipers are more unsuspicious than the Red-breasted Snipes; while their very sociable disposition draws them so closely together, that scores may be cruelly slaughtered at a single discharge, as is too often done by greedy gunners, thinking only of making a large bag. I do not know what one of its tribe is more gentle and amiable than this species; and certainly none surpass it in easy grace of movement: there is nothing brusque, or hasty, or startling in its bearing; it has the poise of perfect breeding. There are few prettier sights than a flock feeding in fancied security by the water's edge, where some pace daintily along the oozy surface, probing at ease to the right and left as they advance, while others, wading into the water till it reaches their plumage, continually dip the head out of sight for a moment, exploring the bottom with the delicately sensitive bill. The thrust is given quickly, with the bill held perpendicular, and thrust in to its full length; a second suffices for the tactile sense to discover if there be food or not, when the bill is as dexterously withdrawn and reinserted. While thus feeding, the flock scatters sometimes quite widely, covering much ground, and all the while sustaining a pleasant conversation in undertone. Upon alarm the birds utter a soft ‘*weet*,’ and take wing, flying in a compact flock, but generally to no great distance; indeed they oftenest circle a few times and then realight on the same spot, pitching down all together in a compact body, and standing motionless thus grouped like statues, wondering what caused them fright. If reassured, they soon scatter again to resume their busy search for food. In wading among uneven shallows they are not seldom taken off their feet over some deeper inequality of the bottom, when, being more extensively semipalmate than most Snipe, they readily swim for a little distance till they find footing again. When thus moving over the water they remind one of Phalaropes; they rest very lightly on the surface, seeming to scarcely sink at all, elevate the tail, and accompany each motion of the feet with back-and-forth swaying of the head. They also swim bravely on, when dropped wounded into the water; I have seen them make twenty or thirty yards to reach the brink of the pool, where they would attempt to hide in the rank herbage, stretching themselves at full length, and submitting to capture without a struggle, though with such an air of sad helplessness,

and with such a pleading glance from their dark full eyes, that one could not but wish that the mischief were not done."

By some authors the present species has been subdivided into two forms—*Macrorhamphus griseus* and *Macrorhamphus scolopaceus*; but, from an examination of specimens, I cannot believe that they can properly be separated. Dr. Coues also writes to me on the subject as follows:—"The so-called *Macrorhamphus scolopaceus* has no claim to be considered even a fair variety of this species. Out of the same flock specimens may be shot having the bill ranging from 2.25 inches to 3.25 inches in length, the various sizes being connected by gradations of tenths or twelfths of an inch. The birds also show corresponding variation in the size of other parts."

The specimens figured are adults in summer and winter dress from the coast of New Jersey, both being in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, *ad.* Spring; *b*, *ad.* winter, coast of New Jersey (*Krider*). *c*, ♀. Fort Kenay, Alaska, May 6th, 1869 (*Bischoff*). *d*, ♂. Fort Tejon, California (*De Vesey*). *e*, ♂. Matamoras, Mexico, July 26th, 1863 (*H. E. Dresser*).



## Genus TEREKIA.

*Scolopax* apud Gldenstdt, Nov. Comm. Petrop. xix. p. 473 (1774).

*Totanus* apud Horsfield, Trans. Linn. Soc. xiii. p. 193 (1822).

*Numenius* apud Vieillot, Encycl. Mth. iii. p. 157 (1823).

*Fedoa* apud Stephens in Shaw's Gen. Zool. xii. part i. p. 83 (1824).

*Limicula* apud Vieillot, Faun. Franç. p. 306 (1825).

*Xenus* apud Kaup, Natrl. Syst. p. 115 (1829).

*Limosa* apud Lesson, Trait d'Orn. p. 554 (1831).

*Terekia*, Bonaparte, Comp. List, p. 57 (1838).

*Simorhynchus* apud Keyserling & Blasius, Wirbelth. Eur. p. 74 (1840).

THIS genus contains but a single species, which by many authors has, on account of the form of its bill, been included in the genus *Limosa*, from which, however, it is unquestionably separable. It inhabits the Palarctic, Ethiopian, Oriental, and Australian Regions, its full range being given in the following article.

In its habits this bird closely resembles the Totanid, being most nearly allied to the common Sandpiper. It frequents the banks of rivers and the shores of small lakes and pools, being more especially a frequenter of rivers. In its flight and movements it resembles *Totanus hypoleucus*; and its call-note is a clear, loud, musical whistle. It nests near the water, usually in places where dbris has been left by the floods, and places in a mere depression in the ground or amongst the dbris its four eggs, which resemble those of the Wood Sandpiper or the common Sandpiper, being dull pale buff marked with purplish grey and dark purplish brown. I have used the generic title *Terekia* for this genus, as *Xenus*, the name given by Kaup in 1829, is so close to *Xenos*, Rossi, 1792, that it must be discarded.

*Terekia cinerea*, the type of the genus, has the bill long, higher than broad at the base, gradually tapering and upcurved towards the point, which is obtuse and sharply decurved; both mandibles grooved nearly to the tip; the nostrils basal, lateral, linear; wings long, pointed, the first quill longest, the inner secondaries elongated; tail short, slightly rounded; legs moderate, slender, the tibia bare for a considerable distance; tarsus scutellate; hind toe small, elevated, anterior toes long, slender, marginate, webbed at the base; claws small, slender, nearly straight, moderately obtuse.







TEREKIA CINEREA.  
IXXX

## TEREKIA CINEREA.

(TEREK SANDPIPER.)

*Scolopax cinerea*, Gldenst. N. Comm. Acad. Sci. Imp. Petrop. xix. p. 473, tab. xix. (1774, descr. orig.).

*Terek Snipe*, Lath. Gen. Syn. v. p. 155 (1785).

*Scolopax terek*, Lath. Ind. Orn. ii. p. 724 (1790).

*Totanus javanicus*, Horsf. Trans. Linn. Soc. xiii. p. 193 (1822, descr. orig.)

*Scolopax sumatrana*, Raffl. Trans. Linn. Soc. xiii. p. 327 (1822, descr. orig.).

*Numenius cinereus*, Bonn. et Vieill. Enc. Mth. iii. p. 1157 (1823, descr. orig.).

*Limicola terek*, Vieill. Faun. Franç. p. 306 (1825).

*Fedoa terekensis*, Steph. Gen. Zool. xii. part 1, p. 83 (1824).

*Xenus cinereus*, Kaup, Natrl. Syst. p. 115 (1829).

*Limosa indiana*, Less. Trait d'Orn. p. 554 (1831).

*Limosa recurvirostra*, Pall. Zoogr. Rosso-Asiat. ii. p. 181 (1831).

*Terekia javanica*, Bonap. Comp. List of B. of Eur. and N. Amer. p. 57 (1838).

*Limosa terek*, Temm. Man. d'Orn. iv. p. 426 (1840).

*Terekia cinerea*, Bonap. Cat. Coll. Parzud. p. 15 (1856).

*Figuræ notabiles.*

Gould, B. of Eur. iv. pl. 307 (1837); id. B. of Austr. vi. pl. 34 (1848); Naum. Vgel Deutschl. xiii. Taf. 386 (1860); Vian, Rev. et Mag. de Zool. xiv. pl. 15 (1862); Bree, B. of Eur. iii. pl. (1863).

♂ *stiv.* supr griseus, scapis plumarum line angust nigr indicatis : uropygio dorso concolori : tectricibus supracaudalibus fulvo versus apicem marginatis : tectricibus alarum minimis nigris, majoribus dorso concoloribus : scapularibus dorsalibus nigricantibus, lineam longam nigram formantibus : primariis brunneis, interioribus pallidioribus, harum et secundariarum omnium apicibus conspicue albis, intimis dorsalibus griseis dorso concoloribus exceptis : caud albido-grisescente, nigricante indistinctissim marmorat, rectricibus duabus mediis fulvo lavatis : loris genisque albidis, griseo paullulm notatis : regione auriculari cinereo : subts albus, pectore superiore grisescente : subcaudalibus et subalaribus cum pennis axillaribus albis : rostro recurvirostro nigricante, versus basin mandibul viridescente : pedibus pallid flavicanti-viridibus : iride nigricanti-cinere.

♂ *hiem.* similis prcedenti, sed scapularibus et tectricibus alarum haud nigricantibus, dorso reliquo concoloribus.

*Summer plumage.* Above grey, the shafts of the feathers of the middle of the back distinctly marked in the centre with black, the innermost scapulars nearest the back black, forming a distinct black line along each side of the centre of the back ; least wing-coverts black, the median and greater coverts grey, like the back, with distinct markings in the centre of the feathers, a few of the latter tipped with white ; quills blackish with white shafts, somewhat washed with grey, the inner primaries and all the secondaries tipped conspicuously with white, those nearest the back excepted, these being coloured like the back ;

tail pale grey, slightly glossed with a coppery lustre; lores, feathers round the eye, and cheeks whitish, striped longitudinally with greyish brown; under surface of the body white, purest on the throat, the upper part of the breast greyish, with narrow shaft-stripes of darker brown; under wing- and tail-coverts and axillary plumes white; bill blackish, greenish at the base of the under mandible; feet light yellowish green; iris blackish grey. Total length 8·5 inches, culmen 1·8, wing 5·3, tail 2·4, tarsus 1·05.

*Autumn plumage.* Similar to the last, but losing all trace of the black on the back, which is only indicated by narrow black shaft-stripes, and the black is also fast disappearing from the scapulars and wing-coverts; a few feathers on the rump and upper tail-coverts, as well as the rectrices, edged with fulvous, the latter also mottled with greyish black; the black spot before the eye scarcely indicated, and the upper part of the breast greyish with very narrow blackish lines down the shafts of the feathers, nowhere very distinct.

*Winter plumage.* Still more grey than in the autumn dress; the feathers more tinged with fulvous here and there, and the black stripes still more faintly indicated.

*Young male in first plumage* (shot on the 24th of July). All the grey feathers on the upper part of the body edged with rusty yellow; the shoulder-feathers and elongated wing-covering feathers had on the point a blackish zigzag mark; the long black marks on the shoulder are much smaller than in the spring plumage, or only consist of spots wide from each other; the tail very little banded or spotted, the end of it rusty yellow with a blackish band; under parts dirty white, from the breast to the throat grey with dark stripes; legs dirty citron-yellow; bill olive-black, yellowish at the base of the under mandible; iris greyish brown; otherwise like the adult birds. Length 245 millims., extent of wing 395, bill 41, tarsus 27, middle toe 24, wing 126, tail 49. (*W. Meves, in epist.*)

The young female was a little larger, had more black on the wings, but no zigzag marks on the covert-feathers; the breast was also lighter than that of the young male. (*Id. l. c.*)

*Young in down.* Blackish above, marked with deep black down the centre of the back; the head and neck covered with fulvous down, becoming more golden on the back; lores and cheeks white, with a black line traversing the eye from the base of the bill to the hind part of the ear; underneath white, slightly tinged with fulvous on the breast and flanks.

THE Terek Sandpiper, as we prefer to call this bird, breeds plentifully in Northern Russia, but seldom visits any other part of Europe. It is likewise spread over Siberia; and on the approach of winter it migrates into India and China, even reaching Australia and Southern Africa.

It has never yet occurred in Great Britain; but in France it has been stated by Temminck to have been obtained in Normandy and near Paris: no other instance of its capture is recorded by Degland and Gerbe; but it has been met with in Southern France, as recorded by MM. Jaubert and Barthélemy Lapommeraye, who observe that out of the two or three instances of this bird's occurrence in France, one took place in the southern part of the country, the bird in question being one in spring plumage, procured near Montpellier by M. Lebrun, and now in the collection of M. Doumet, at Cette. The above-named authors proceed to state that the economy and habits of this bird are similar to those of the other Godwits—an assertion which, with the very excellent notes of Mr. Meves before us, we must be excused for calling in question.

It has recently been obtained in Italy; thus Count Salvadori writes to us:—"The only instance of this bird's occurrence in Italy took place two years ago, in the spring of 1869, when

Professor Savi found one morning in the market at Pisa three specimens which had been captured near that town. One of these is now in the Turin Museum." Dr. Blasius himself shot one specimen at Vechelde, Brunswick, in the autumn, and knew of another having been obtained in the same locality; but beyond those above recorded we do not know of any other instances of its occurrence in Europe, out of Russia. Here it breeds plentifully in the vicinity of Archangel, as will be seen by the notes supplied to us by our excellent correspondents, and given in detail below. Pallas observed it in the high northern parts of Siberia, and only occurring in the southern parts during migration. Dr. v. Middendorff says that he "found large flocks of these birds on the south coast of the sea of Ochotsk, from the end of June to the middle of August, which consisted chiefly of females, and did not seem to show signs of breeding, the ova likewise not being developed. I counted over fifty in some flocks; and when fired at they swam and dived excellently. When solitary they uttered a piping note, reminding me of some of the Totanidæ." Dr. Radde found scattered individuals near the outpost of Kirinsk, in the Southern Apfelgebirge, early in August, in the swamps, and observes that they had just assumed the winter plumage, and agreed in this respect with Europe-killed specimens.

Further to the east Dr. von Schrenk procured a specimen of the Terek Sandpiper on the Amoor, and the Dutch travellers met with it in Japan. Mr. Swinhoe has obtained it in several different parts of China, and writes, "I have never observed it on the south Chinese coast, and it is not improbable that it migrates southward through the interior."

As regards its occurrence in India, Dr. Jerdon says, "This neat-plumaged little Sandpiper is not very abundant in the south of India, but is met with more frequently towards the north; it frequents the shores of seas, backwaters, tanks, and rivers in small flocks." It has also been found in Java and Sumatra and Borneo; and Mr. Gould obtained a single specimen on the river Mokai, in New South Wales, on the 12th of July, 1839; while, according to Lesson, it was found in Van Diemen's Land by Labillardière.

Regarding its range in Southern Africa, we may state that it has been procured by Mr. Andersson in Damara Land, and by Mr. Ayres in Natal. The latter gentleman, in forwarding an example to Mr. J. H. Gurney, writes as follows:—"The specimen sent was shot from a flock of four or five, amongst the mangroves in the Bay; they are scarce birds here."

We translate the following notes on the breeding-habits of this wader by Count C. von Hoffmannsegg and Mr. K. G. Henke (Allg. deutsche. natur. Zeitung, 1856, pp. 238-240):—

"During our journey in Northern Russia we had good opportunities of observing the habits of *Limosa cinerea*, and are thus enabled to give information respecting them. Our attention having been called to it by Dr. Thienemann and Herr Staatsrath Brandt, of St. Petersburg, we took particular pains in observing this bird's habits. On the flat banks of the northern Dwina and its small tributaries *Limosa cinerea* is rather abundant; and not only are the islands of the Dwina delta their chief habitat, but we found them in numbers on a bare sandy peninsula on the White Sea, nesting in company with *Tringa temminckii* below a colony of Arctic Terns (*Sterna arctica*). *Limosa cinerea* appears to arrive at Archangel about the latter end of May, seldom earlier in the month or in April; therefore the regular breeding-time may be stated as early in June, which opinion is grounded on the following data:—

"1853. The first egg, nearly ready for exclusion, was cut out of the bird on the 29th of May.

"1854. The first nest, containing eggs very slightly incubated, was found on the 3rd of June.

"1855, on the other hand, was a very early spring here, and the nesting-time of the birds was in general also much earlier. As is the case with all northern birds, they commence nesting very soon after their arrival.

"In the nesting-time they choose small open places in the bushes, seldom amongst the bushes themselves, from ten to twenty paces from the water, on the open grass, generally in places which, lying low, are covered with débris left by the annual floods. The four thin-shelled eggs are deposited in a slight depression in the ground, about four inches in diameter, on small bits of rotten wood, pieces of reed, and but seldom leaves, behind a small knot of drift wood, a root, or a slightly elevated piece of ground; and in one instance, in lack of so slight a protection, a piece of dried cowdung served for this purpose. Returned from our excursions, bringing back the eggs of *Limosa cinerea*, taken at the same time in different localities, we could at first scarcely believe that eggs which, in size and colour, so closely resembled those of the Wood-Sandpiper (*Totanus glareola*) could be the eggs of a Godwit, although *Totanus glareola* was not seen on the sand-islands, and is indeed of rare occurrence, probably nesting in trees and using the deserted nests of other birds, like its near ally the Green Sandpiper (*Totanus ochropus*). Only later did we succeed in dispelling our doubts. The eggs resembled those of other Godwits very little, either in form, size, or colour. Only once did we find an egg light ash-grey with darker washy spots.

"The note of the male, which is probably its pairing-call, is clear, loud, and full from the throat. It is uttered, and often repeated, from a stone, root of a tree, a hillock, or any similar elevated position, the bird moving its body and apparently exerting itself in calling. The note is of three syllables, and sounds like *Kuwitzzüü*, *Kuwitzzüüü*, *Kuwitzzüüüü*, or also *gizzüüüüü*, *gizzüüü*, *gizzüüüüü*, the last syllable always rising higher and more drawn out; sometimes a low, flute-like, melancholy note, *hahiaaa*, *haiaaaa*, *hahiaaaa*, is uttered immediately after, when the former call has been often repeated, and contrasts so strongly with it that only a person who knows the note of the Great Black Woodpecker (*Picus martius*) can imagine the sound. The peasants call the bird, very correctly, after its note, *Kuwitri*, whereas they scarcely distinguish the other species of long-billed waders, calling them *Kuliki*. If one approaches the young, which make their presence known by a low chirping, like a mouse creeping through the grass, the parent birds settle on a pole in the fence or the top of a fir tree, and circle round and return again to their elevated perch. When a large bird of prey hove in sight, we heard a continuous note, *dick, dick, dick, dick*, until it went away."

Professor Liljeborg writes:—

"Found at Wajmugskaja and Archangel, in June and July, in places numerous. They frequented the shores of the Dwina and those of the small rivers falling into it, where they were often to be found in company with *Totanus hypoleucus*. In their flight and motions they much resemble *Totanus*. If we came near the young, which were hidden in the high grass near the river-banks, and which about the end of June were about half-grown and had straight bills, the parent birds would fly round after the manner of *Totanus glareola*, uttering loud cries; the male, however, would not approach so near as the female. I found traces of incubation on the male as

well as the female. During a bright night they were to be found on the move, and often several pairs were met with on the river-bank searching for food. In their stomachs I found remains of aquatic insects. In measurements the male and female do not differ perceptibly, only the female appears to have a longer bill. I have, however, observed that they vary in size, as also in the length of the bill, which is probably owing to difference of age."

Mr. Meves, who has carefully studied the present bird, has kindly sent us the accompanying note:—

"This peculiar Wader I would almost call the River-Sandpiper. I first observed it on the 9th of July, on the river Onega, near Birythewa, and thence down the river, though not numerously, to the town of Onega. They were on the small sandy islands overgrown with willow bushes, or on the banks of the river, where, when I disturbed them, they tried with loud cries to defend their young, which were probably concealed in the grass. Before I fired a shot a male ran along in front of me, only a few paces off, among the willow bushes, and in its manner and movements bore the greatest resemblance to the Common Sandpiper (*Actitis hypoleuca*). The note, however, was very different, musical, sometimes reminding one of that of the Greenshank (*Totanus glottis*), sometimes of the Ringed Plover (*Charadrius hiaticula*), even at times of *Picus martius*.

"I only procured one young bird, not more than a couple of days old, which had ventured out of its hiding-place, and I secured it.

"I suppose that most of the young were already full-grown; for when I visited the Dwina islands, near Archangel, on the 24th of July, I observed small flocks of them on the shores of these islands, seeking their food or wading in the water. They were, however, very shy. Those I shot were remarkably fat, and their skins were very thin; therefore I had great trouble in preparing them. I saw the last of them at Cholmogory, on the 16th of August, soon after which I left the Dwina.

"The reason why this wader has received so many and various generic names, and been so variously placed in ornithological systems, arises probably from the fact of ornithologists having placed more weight on the form of the bill &c. than on the general habits of the bird, its eggs, and the plumage of the *nestling*. In these three latter respects it is a *Totanus*, and may be placed between *Totanus glottis* and *Actitis hypoleuca*. The plumage of the nestling greatly resembles that of *Actitis hypoleuca*, and, except for the two connecting webs and the shorter down on the tail, would be difficult to distinguish from it. The eggs also resemble those of *Actitis* much more than those of *Totanus*. The eggs and the downy young of the *Limosæ* (*L. melanura* and *L. rufa*) bear considerable resemblance to those of *Numenius* (*N. phaeopus* and *N. arquata*), but not the least to those of the Terek Sandpiper. The downy young of *Totanus glareola*, *T. ochropus*, *T. calidris*, *T. fuscus*, and *T. glottis* bear considerable affinity to each other, the general colour being grey with large dark spots. The resemblance between the young of the Snipes (*Scolopax major*, *S. gallinago*, and *S. gallinula*) is also great, rust-brown being the general colour. Their downy plumages approach those of the *Tringæ* (*T. alpina* and *T. maritima*), *Machetes pugnax*, &c. Degland and Gerbe say the bill of this bird is nearly three times as long as the head; and Fritsch states the same. This is not the case, as it is not quite twice the length of the head."

In Dresser's collection are six eggs of this bird, obtained near Archangel by Mr. W. Meves. These eggs bear most resemblance in colour and markings to those of the Greenshank, but also remind one somewhat of those of the Common Sandpiper. The ground-colour is dull buff, and the markings light purplish-grey and dark purplish-brown. In form they are like all Sandpipers' eggs, pear-shaped, and in size vary from  $1\frac{1}{40}$  inch by  $1\frac{1}{40}$  inch to  $1\frac{2}{40}$  inch by  $1\frac{4}{40}$  inch. As Mr. Meves very justly remarks, the eggs of this bird bear no resemblance whatever to the eggs of any of the true Godwits.

The specimens figured in the Plate are from our own collection. The summer plumage described is from a beautiful example in Mr. Howard Saunders's collection, shot in May, the autumnal dress being described from a specimen in our own possession, killed in July; and already by that time nearly all traces of summer plumage have disappeared, beyond a few black marks on the scapulars. The winter garb is completely assumed by the end of August, judging from a specimen in our collection killed in that month, agreeing exactly with another winter specimen in Canon Tristram's collection, from Natal. The young in down has been already capitally illustrated by Mr. J. Vian (*l. c.*).

In the preparation of the above article we have examined the following specimens:—

*E Mus. Sharpe and Dresser.*

- a.* ♂. Archangel, July 27th 1869 (*Meves*). *b.* Southern portion of Lake Baikal, August 24th, 1869 (*Dybowsky* and *Parrex*). *c. pull.* Archangel, June 1861 (*Moeschler*).

*E Mus. H. B. Tristram.*

- a.* ♀. Natal (*Ayres*). *b.* Siberia.

*E Mus. Howard Saunders.*

- a.* River Volga, May 1869 (*Moeschler*).

## Genus LIMOSA.

*Limosa*, Brisson, Orn. v. p. 281 (1760).

*Scolopax* apud Linnæus, Syst. Nat. i. p. 246 (1766).

*Totanus* apud Bechstein, Gemeinn. Naturg. Deutschl. iv. p. 234 (1809).

*Actitis* apud Illiger, Prodrum, p. 262 (1811).

*Limosa*, Leisler, Nachtr. Bechst. Naturg. Heft ii. p. 150 (1815).

*Limicola* apud Vieillot, Nouv. Dict. iii. p. 249 (1816).

*Fedoa* apud Stephens in Shaw's Gen. Zool. xii. pt. i. p. 73 (1824).

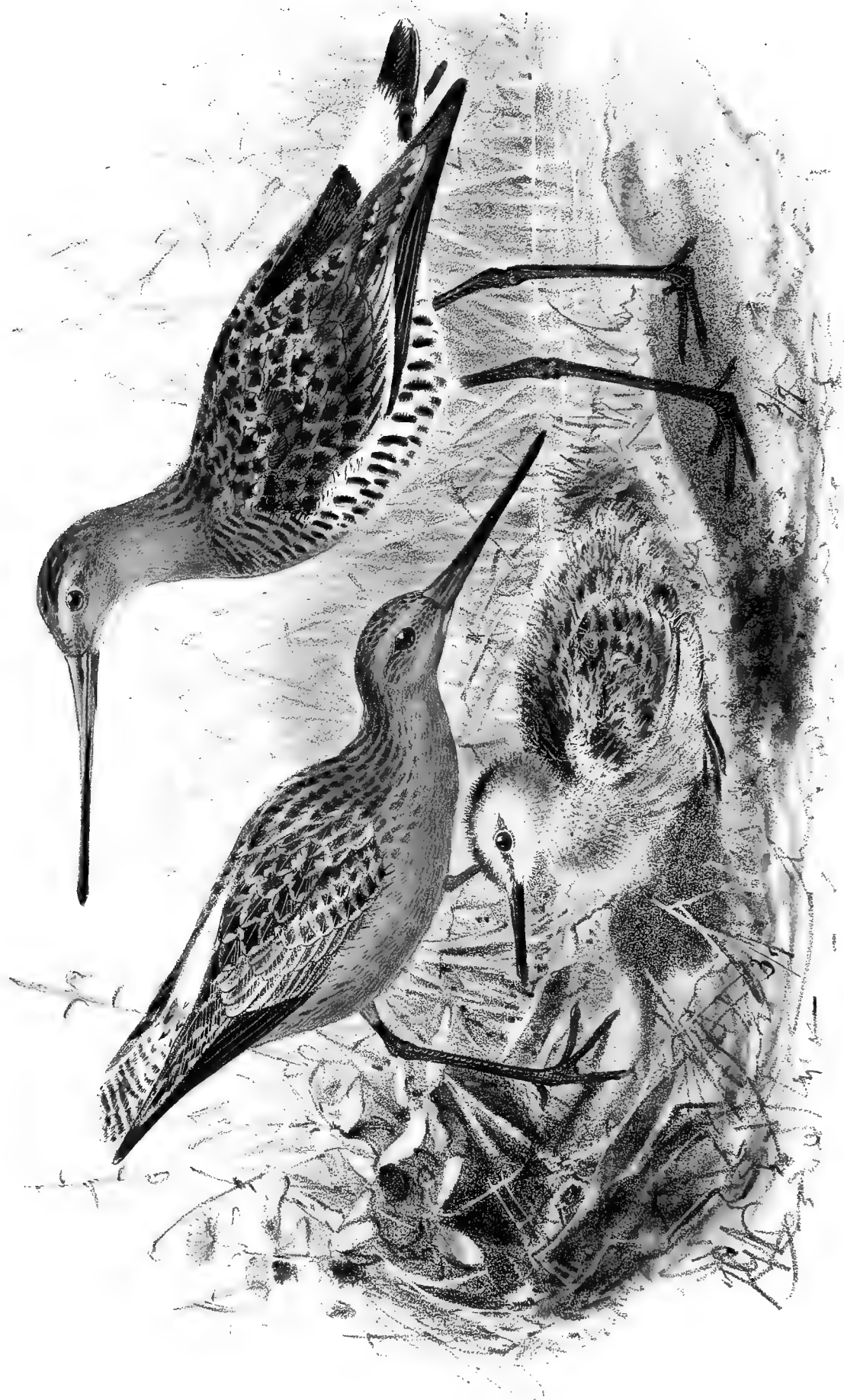
THE Godwits inhabit the Palæarctic, Ethiopian, Oriental, Australian, Nearctic, and Neotropical Regions, two species being resident in the Western Palæarctic Region.

They frequent marshes and damp localities, and are found both on the sea-coasts and inland, in the latter localities during the nesting-season, and usually on the coasts during passage. They walk with ease, and frequently wade far into the water in search of food. Their flight is strong and tolerably swift, resembling that of other larger Sandpipers. They are gregarious, and are on passage seen in flocks, frequently consorting with other species of waders, especially with Knots; and they also breed in small colonies. They feed on small aquatic insects &c. and crustaceans, which they obtain on the shores of pools and in morasses and on the sea-coasts. They place their eggs, which are four in number, in a depression in a tussock or in some tolerably dry place, which they line with dry grass. The eggs are dull greenish, indistinctly blotched with brownish olivaceous, and are pyriform in shape.

*Limosa lapponica*, the type of the genus, has the bill more than twice the length of the head, slender, higher than broad at the base, tapering and recurved towards the tip, which is slightly enlarged and obtuse; both mandibles flexible to a considerable extent, and grooved nearly to the tip; nostrils linear, basal; wings long, pointed, the first quill longest, the inner secondaries elongated, tapering; tail short, nearly even; legs long, slender; tibia bare for fully or more than a third of its length; tarsus scutellate; hind toe small, elevated; anterior toes long, slender, marginate, webbed at the base, the web between the outer and the middle toe being the largest; claws small, curved, obtuse, that on the middle toe slightly dilated on the inner edge.



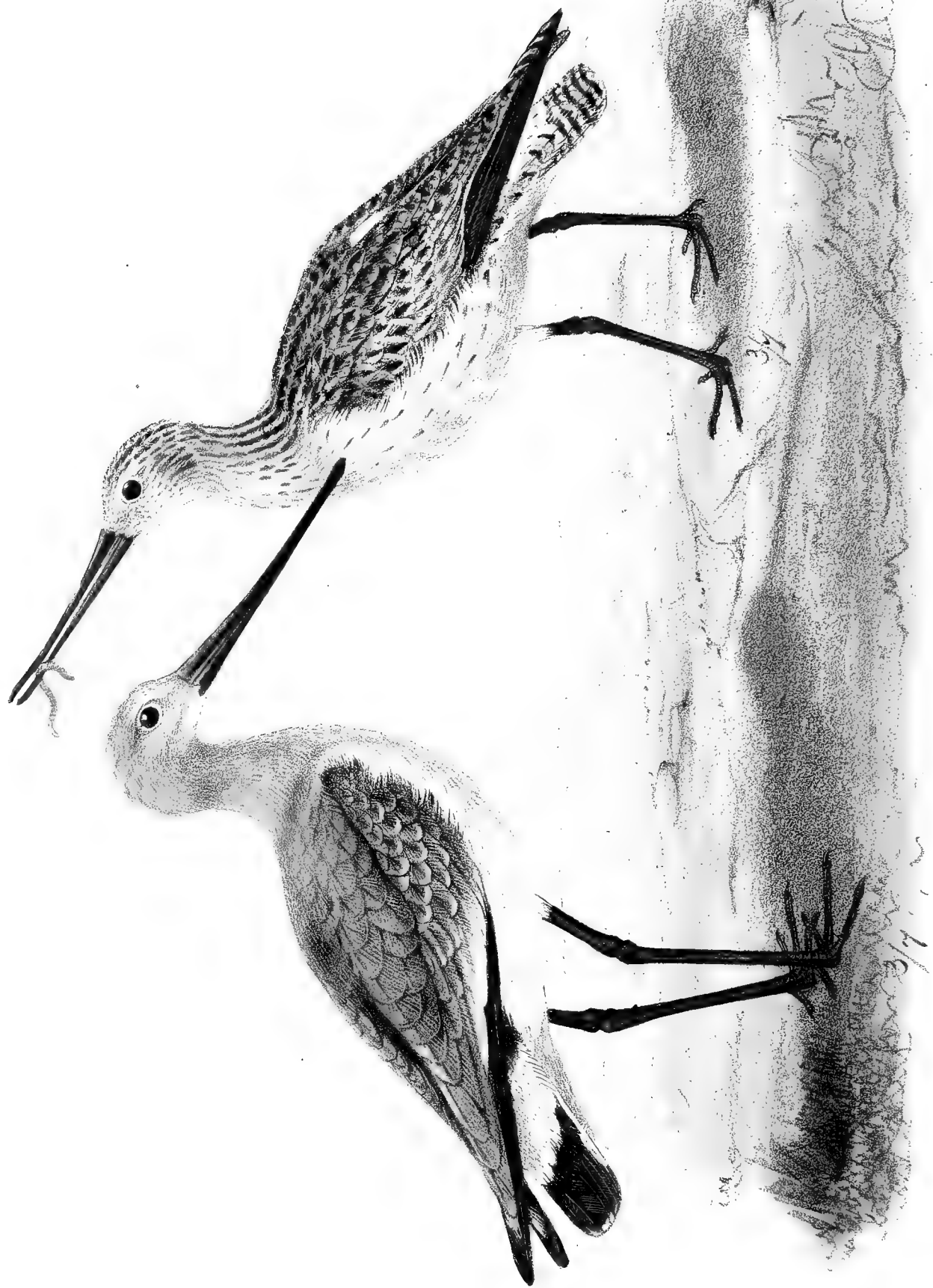




BLACK-TAILED GODWIT.  
LIMOSA LIMOSA

BAR-TAILED GODWIT.  
LIMOSA LAPPONICA





BLACK-TAILED GODWIT.  
LIMOSA LIMOSA

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BAR-TAILED GODWIT.  
LIMOSA LAPPONICA

## LIMOSA LAPPONICA.

(BAR-TAILED GODWIT.)

- Limosa rufa*, Brisson, Orn. v. p. 281. no. 5 (1760).  
*Scolopax lapponica*, Linn. Syst. Nat. i. p. 246. no. 15 (1766).  
*Scolopax leucophæa*, Lath. Ind. Orn. ii. p. 719. no. 17 (1790).  
*Tringa gregaria*, Otto, Buffon, Uebers. vol. xxvi. p. 242 (1797).  
*Totanus ferrugineus*, Meyer, Taschenb. Deutsch. Vögelk. ii. p. 375 (1810).  
*Totanus leucophæus* (Lath.), Bennicken, Annal. Wetter. Gesells. Naturk. iii. p. 142 (1812).  
*Limosa meyeri*, Leisler, Nachtr. Bechst. Naturg. Heft ii. p. 172 (1811-15).  
*Limicula meyeri* (Leisl.), Vieill. N. Dict. iii. p. 249 (1816).  
*Limicula lapponica* (L.), Vieill. tom. cit. p. 250 (1816).  
*Limosa noveboracensis*, Leach, Syst. Cat. Brit. Mus. p. 32 (1816).  
*Limosa rufa* (Briss.), Temm. Manuel, ii. p. 668, iv. p. 424 (1820-40).  
*Fedoa rufa* (Briss.), Stephens, Gen. Zool. *Aves*, xii. pt. 1, p. 77 (1824).  
*Fedoa meyeri* (Leisl.), Stephens, tom. cit. p. 75 (1824).  
*Fedoa pectoralis*, Stephens, tom. cit. p. 79 (1824).  
*Limosa ferruginea*, Pallas, Zoogr. Rosso-As. ii. p. 180. no. 291 (1831).

*Barge rousse*, French; *rostrothe Uferschnepfe*, German; *De Rosse Grutto*, Dutch; *Rædbrystet Kobbersneppe*, Danish; *Roströd Långnäbba*, Swedish; *Rustræd Langnæbbe*, Norwegian; *Sookalen krasnõi*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 900; Naum. Vögel Deutschl. 215; Werner, Atlas, ii. p. 668; Gould, Birds Eur. 306; id. Birds G. Brit. pt. xiv.

♂ *æstiv.* suprâ brunneus, plumis pallidè ferrugineo notatis: pileo summo et collo postico lætiùs ferrugineis, medialiter brunneo striolatis, hâc angustiùs lineato: fasciâ superciliari latâ et facie laterali totâ ferrugineis immaculatis, loris paullò nigricante lineatis: remigibus cinerascenti-brunneis, minimis vix albido limbatis, medianis et majoribus magis conspicuè albo marginatis et terminatis: remigibus nigris, primariorum scapis albis, medianis conspicue albo marginatis, secundariis brunnescentibus dorso concoloribus et eodem modo ferrugineo et albido notatis: dorso postico et uropygio purè albis celatè nigro notatis, supracaudalibus ferrugineo lavatis et brunneo transfasciatis: rectricibus brunneis, conspicuè albo terminatis, centralibus pallidè ferrugineo tinctis et albo transfasciatis, exterioribus tantùm intùs albo fasciatis extùs plus minusve albo variis: subtùs intensè ferrugineus, abdomine imo et subcaudalibus albido lavatis, his subterminaliter brunneo fasciatis: pectore summo lateraliter brunneo notato et lineato: subalaribus et axillaribus albis, brunneo notatis aut semifasciatis: rostro nigricante, versus basin flavicante: pedibus nigris: iride nigrâ.

*Ptil. hiem.* suprâ cinerascenti-brunnea, dorsi plumis medialiter saturatoribus et fulvescente vix lavatis: pileo

summo cum facie laterali colloque postico obscurè brunneo lineatis, illo saturatiore, loris genisque magis albicantibus: remigibus ut in ptilosi æstivâ coloratis, sed magis cinerascentibus et maculis ferrugineis nullis: dorso postico, uropygio et supracaudalibus purè albis, maculis nigris celatis magis conspicuis, his distinctè transfasciatis: rectricibus cinerascenti-brunneis vix fasciatim brunneo variis, albo limbatis et conspicuè terminatis: gulâ albicante: gutture toto et pectore superiore pallidè cinerascenti-brunneis brunneo obscurè variis, hâc fulvescente tincto: corpore reliquo subtùs albo, hypochondriis et subcaudalibus brunnescente notatis: subalaribus et axillaribus albis brunneo notatis, his irregulariter transfasciatis.

*Av. hornot.* suprâ brunneus, ubique fulvescente maculatis notatis: pileo summo fulvescenti-brunneo distinctè saturatiùs striolato, collo postico obscurè brunneo medialiter lineato: fasciâ superciliari albâ minutè brunneo lineatâ: facie laterali reliquâ fulvescenti-brunneâ, lineis parvis brunneis notatâ et maculatâ: tectricibus alarum medialiter brunneis, latè fulvescenti-albido marginatis: remigibus ut in adultis coloratis, secundariis autem conspicuè extùs fulvescente maculatis: dorso postico cum uropygio et supracaudalibus albis, maculis brunneis celatis variis: caudâ albâ fulvescente lavatâ et conspicuè brunneo transfasciatâ: gulâ albidâ: corpore reliquo subtùs pallidè fulvescenti-brunneo, abdomine et subcaudalibus albicantibus, gutture cum pectore summo et hypochondriis brunneo lineatis: subalaribus et axillaribus albis brunneo notatis: rostro nigro, ad basin carneo: pedibus sordidè plumbeis: iride nigrâ.

*Pull.* lanugine fuscâ indutus, plumis nigricanti-brunneis pallidè rufo marginatis, tectricibus alarum latè albido terminatis: pectoris plumis pallidè fusciscenti-brunneis.

*Adult Male* (Pagham, Sussex, 13th of May). Crown of the head and nape blackish brown, each feather edged with bright rust-red, the margins being broader on the feathers of the nape; back and scapulars also dark blackish brown, with narrower rufous edgings; rump white, the feathers here and there with narrow dark brown central lines; upper tail-coverts white, marked with dark brown, and washed with rufous towards the tip; tail white, washed with rufous, broadly barred with dark brown, and tipped with pure white; primaries dark blackish brown, the inner web broadly edged with white from the base up to two thirds of the length, the inner primaries narrowly margined with white; secondaries dark sooty grey, margined with white, the elongated inner secondaries darker, and with rufous spots along the edge; sides of head, throat, neck, and entire underparts rich ferruginous-red, on the lores, auriculars, and sides of the neck marked with black lines; lower part of the abdomen washed with white; under tail-coverts lighter than the rest of the underparts, marked with white and with dark brown spots or V-shaped bars on the lower end of the feathers; under wing-coverts white, with a dark central line, and a second dark line passing round the feathers, leaving a broad white edging; axillars white, banded with blackish; beak blackish, reddish yellow at the base; legs black; iris brown. Total length 15·3 inches, wing 8·4, tail 2·7, tarsus 2·2, culmen 3·5.

*Adult Female in summer* (Kylmesin-järvi-ranta, Lapland, 18th of June). Entire back and upper parts as in the autumn plumage; throat and chest very pale rufous, irregularly striped with blackish brown, the feathers here and there having a blackish brown central streak; rest of the underparts dirty white, washed with pale rufous; tail earth grey, tipped with white, the outer feathers marbled on the outer web, and notched on the inner web with white, the central feathers with the notches extending almost to the centre, forming oblique bars, much more irregular than in the male, and washed with rufous buff. Total length 17 inches, wing 8·6, tail 3·3, tarsus 2·2, culmen 3·9.

*Adult Female in winter plumage* (near Liverpool, September 1872). Similar to the young in first autumn,

but having the upper parts more uniform hair-brown, washed with grey, the central markings to the feathers being much less distinctly defined; the feathers on the back and scapulars hair-brown, darker towards the centre, and having lighter edges, none of the feathers having fulvous edgings as in the young plumage; tail dark earthy grey, each feather edged with buffy white, and the centre ones indistinctly barred with a single light bar, not barred as in the male; throat, neck, and breast light hair-brown, washed with buff, indistinctly striated with darker brown; lower part of the breast and abdomen white; under tail-coverts white, irregularly barred with blackish brown. Total length 17·7 inches, wing 8·6, tail 3·3, tarsus 2·2, culmen 4·4.

*Young in first autumn.* Above brown; the crown of the head dark brown, with margins of buffy brown, causing a somewhat striped appearance; fore part of the face brown, with tiny markings of fulvous-brown; a broad but not very distinct eyebrow and the hind part of the cheeks and ear-coverts dull white, with small and indistinct longitudinal margins of brown, a little plainer on the ear-coverts; hinder part of the neck greyish brown, with indistinct lines of darker brown down the centre of the feather; back and scapulars glossy dark brown, with broad fulvous edgings to the feathers; lower part of the back and rump pure white, the feathers of the latter marked with a spot of greyish brown near the tip; upper tail-coverts as well as the tail white, tinged with buff and barred with blackish brown, the outer web of the external feather irregularly marked with the latter colour; wing-coverts greyish brown, all of them margined with buffy white, the median coverts more broadly than the lesser, and the greater coverts still more broadly than the median, indeed on the lower median as well as the greater coverts the margins are almost pure white and very broad; primary coverts dark brown, with a faint purple lustre, the innermost ones rather broadly tipped with white; quills paler brown, with a faint tinge of purple, the shafts white, and all rather broadly edged and tipped with white, the innermost secondaries elongated, plainly tinged with buff, and notched on the outer web with buffy white; chin whitish; throat and breast pale sandy brown, with the shafts of the feathers darker brown; lower part of the breast and abdomen white, suffused on the upper part and on the flanks with buffy brown, the belly having the apparent remains of cross bars; all the sides of the body striped with brown down the centre of each feather; under tail-coverts white, some of the lateral feathers streaked down the centre with brown; under wing-coverts white, some of the greater coverts, as well as the primaries, mottled with pale grey on the inner web, the least coverts, along the edge of the wing, spotted with dark brown near the base of the feather; axillary plumes white, irregularly streaked and barred with greyish brown; bill fleshy brown, black towards the tip and at the base of the upper mandible; legs dull leaden-grey; iris blue-black. Total length 13·6 inches, culmen 2·9, wing 8·0, tail 3·1, tarsus 1·9.

*Nestling* (Muonioniska, Lapland, 4th of July). Head and neck covered with soft down, on the fore part of the head greyish white, washed with buff at the edges, with a central dark brown line; centre of the crown dark sooty brown; nape and fore part of the back dark sooty grey, lighter towards the sides of the neck, and darker in the centre; on the back covered with dark brown feathers edged with rufous, and here and there a piece of down still remaining; lower part of the back and rump covered with long fluffy down, sooty grey in colour, marked with rufous, that on the sides of the rump dirty white; tail, only just commencing to show itself, dark brown in colour, tipped with rufous; wing-feathers also only just appearing; primaries dark brown, the inner ones very broadly tipped with white; secondaries, where showing, dark brown, edged and tipped with rufous, and intermixed with long greyish brown down; from the base of the bill to the eye a narrow dark brown line; throat covered with dirty white down; neck, breast, and underparts generally covered with dirty grey down, darker on the breast and lighter and much longer on the lower part of the abdomen; on the lower part of the breast and flanks

the feathers, reddish buff in colour with a central dark brown line, are appearing, but in most parts are covered over or intermixed with down.

*Obs.* The length of the beak varies considerably in different specimens ; and in the series we have examined there are males with beaks as short as 2·7 inches, and others as long as 3·5, and females with beaks varying from 3·3 to 4·4. One peculiar circumstance is the fact that so few females appear to occur, either in the spring or autumn, compared with the number of males that are killed, scarcely one of the former to twenty of the latter. The female may be easily distinguished, not only by being considerably larger, but more especially by the tail, which is not regularly barred as is the case with that of the male, but has very indistinct, and often imperfect, irregularly oblique bars, though it is marked with rufous like that of the male.

THE Bar-tailed Godwit is found throughout Europe during the seasons of migration, straggling down into Africa as far south as the Gambia during the winter. In Asia it is replaced by its near relation, *Limosa novæ-zealandiæ* (*Limosa uropygialis*, Gould); and we are unable to state where these two species meet. The present species does, however, extend its range into Asia, having been procured, as below stated, in Scinde. To the westward it is said to have straggled as far as the Canaries. In Great Britain this Godwit is found in company with the Black-tailed Godwit in the spring on its way to its breeding-haunts, and again in the autumn on its passage to its winter-quarters. No instance is on record of its having bred in the United Kingdom, though, as below stated, Mr. Robert Gray thinks that it may breed in the outer Hebrides. During its migrations it is a tolerably numerous bird all along our coasts. Mr. Hearle Rodd writes to us that it "appears in large numbers on the wet beaches on the Cornish coast in the early autumn, nearly all apparently birds of the year, judging from the buffy tint of the under plumage. A few only appear on their northern migration in the spring, passing to their breeding-places; and these are generally in partial summer-plumage. This Godwit, the Knot, the Curlew-Sandpiper, and the Grey Phalarope, which in summer-plumage have the underparts red, and in the winter-dress white, exhibit in their first autumnal plumage an intermediate tint of buffy white." We have ourselves often shot this bird on the coasts of Kent and Sussex; and Mr. Gurney informs us that, though common on the mud banks of the estuaries and rivers of Norfolk in autumn, but few are met with in winter or spring. According to Mr. Thompson it is a regular autumnal visitant to Ireland, and is not uncommon on the coasts. In Scotland it is, according to Mr. R. Gray, widely distributed in the winter season, but only found in flocks in estuaries, where the oozy shores attract them by the profusion of small marine animals. Mr. Gray further writes, "I believe this Godwit will yet be found nesting in the outer Hebrides, although at present I am not aware of the eggs having been found. In 1858 Dr. Dewar shot five specimens on the 26th of June on Bernera, an island in the Sound of Harris, three of which I had an opportunity of seeing a month afterwards. They were in full breeding-plumage; and Dr. Dewar informs me that all the birds he saw had paired, and seemed from their habits to have their nests at no great distance."

Mr. J. A. Harvie Brown writes to us that "this species is very abundant in autumn upon the coasts of the Firths of Tay and Forth, and is one of the tamest of our shore-birds. On their first arrival, in the end of August or beginning of September, they are easily lured within range of a fowling-piece by imitating the note of some other shore-bird. Thus, by imitating the low

plaintive whistle of the Golden Plover (*Charadrius pluvialis*), I have repeatedly caused Godwits to turn at right angles to their previous course and fly directly towards me; nor have they in such cases discovered their error until I raised the gun to fire.

"The individuals of the same flock of Bar-tailed Godwits often differ greatly in size. Of about thirty Bar-tailed Godwits examined by me one day the bills of some exceeded in length those of others by at least one third. The shorter bills also are not generally so much recurved as the longer ones.

"This species seems to be fond of the company of other Waders. I have seen them even attempting to keep pace with a flock of Golden Plovers; but in this they never succeeded, the headlong, swinging flight of the latter being by far too swift for them. The greatest number of those birds I have seen flying in one flock numbered about forty individuals. They were feeding and flying in company with about an equal number of Knots (*Tringa canuta*), of the company of which species they seem to be especially fond.

"On the west coast the Bar-tailed Godwit does not appear to be so numerous as on the east coast; nor do the numbers visiting Scotland equal those which frequent the sea-lochs of Ireland. There, as we are informed by Thompson, some hundreds are at times seen in one flock."<sup>4</sup>

It has not been recorded, so far as we can ascertain, from Greenland, Iceland, or the Færoe islands, but in Scandinavia it is common, appearing on the southern coasts in the spring, breeding in the high north, and returning again to the south in the early autumn. Mr. Collett records it as occurring on the southern and western coasts of Norway, sparingly in the spring, but rather more numerous in the autumn; it has very rarely occurred in the interior; and the same may be said respecting its occurrence on the southern coast of Sweden, where, on its autumn migration, it appears in September. It breeds in Lapland, where the late Mr. Wolley procured the eggs, and Nilsson records it as breeding in Enare-Lapland. Dresser has obtained the eggs, as well as the young, from Muonioniska; but it appears to be a rare breeder there, judging from the scarcity of the eggs. Mr. Collett states that flocks occur in East Finmark (Varanger fiord) during migration, and that it is supposed to breed there. Wheelwright, when collecting at Quickjock, never procured the eggs of this species, but considered that it bred there. It passes through Finland during migration, and probably breeds in the northern portions of the Government of Archangel. Sabanæeff records it as rare in the Government of Jaroslaf, but as in all probability breeding in the northern part of the Government of Perm; he once met with it during migration near Ekaterinburg. All along the southern coasts of the Baltic it is a regular migrant, much commoner than the Black-tailed Godwit, but rarely seen in the interior. Meyer, however, speaks of it as rare in Livonia. In Denmark, Mr. Benzon informs us, it is, during migration, numerous in some localities, but it seldom occurs in full summer-plumage. With regard to its occurrence in Holland, we are informed by Mr. Labouchere that it is there to be seen regularly on the coast from August to October, though by no means so numerous as the Black-tailed Godwit, and is said to have bred there. On the coasts of France it is a regular migrant in the spring and autumn; but, according to MM. Jaubert and Barthélemy-Lapommeraye, it is never seen in Provence in large numbers. In Spain, Mr. Howard Saunders informs us, it is of rare occurrence in the western portion of the country, but far commoner in the east; he saw a specimen in the market at Malaga in November; and Major Irby states that it is "found on the Spanish side of

the Straits of Gibraltar, as also in Morocco, in considerable numbers during migration; but the larger number pass in September on their way southward, returning again in April; they are seldom seen inland, like *L. ægocephala*." It is also, according to the Rev. A. C. Smith, by no means rare in Portugal. Bailly refers to this species as only occasionally observed in Savoy during migration; and Salvadori states that it occurs in Italy, on the mainland, and also in Sicily, but it is nowhere so numerous as *L. ægocephala*. To Malta it is a very rare straggler, having, according to Mr. C. A. Wright, but once occurred, a specimen (now in the Derby Museum at Liverpool) having been obtained by Mr. W. J. Ross on the 22nd September, 1843. All along the southern coasts of Europe it occurs here and there during migration, and some may pass the winter. Lord Lilford found it in Epirus; and Captain Sperling in November shot two out of three which were feeding on a sandpit off Missolonghi, but he remarks that he never observed any others. Professor von Nordmann found it rare on the coasts of the Black Sea; but, according to Pallas, it is common in the spring on the Caspian. We have no details as to its occurrence on the coast of Asia Minor, where it is doubtless found during migration. Messrs. Finsch and Hartlaub state that it is found in North-eastern Africa, in the southern part of the Red Sea, and the Gulf of Aden down to the Somali country; Loche writes that it is common in Algeria during the winter season, leaving early in the spring. Major Irby informs us that it is by no means uncommon in Morocco during the winter season; and Mr. J. H. Gurney, jun., saw one in full summer-plumage, shot at Harrach, in the Algiers Museum. According to Finsch and Hartlaub it has been procured in the Gambia, but it has not been recorded from Southern Africa. It has also, these gentlemen state, been obtained in the Canaries; but Mr. Godman does not include it in his list of the birds of those islands. In Siberia and in Eastern Asia this species is replaced by the closely allied *Limosa novæ-zealandiæ*, which may be distinguished by its barred rump from *L. lapponica*. Our Bar-tailed Godwit, however, does occur in Scinde, as Mr. A. O. Hume writes (*Ibis*, 1872, p. 468) that he procured numerous specimens there; and Captain Bulger records it as "not uncommon at Mulci-bon, Selham, and Ras Dowra, in Sikkim." The latter, however, may refer to *L. novæ-zealandiæ* and not *L. lapponica*. The bird referred to by Von Middendorff and other naturalists under the name of *L. rufa*, as found in Siberia and Eastern Asia, must, we think, in all cases be referred to *L. novæ-zealandiæ*; and Von Middendorff especially refers to the barred rump in speaking of the Siberian Godwit.

The Bar-tailed Godwit is only known to breed in the north-eastern portion of Europe; and but little is known of its breeding-habits. It deposits two or three eggs in a depression in the soil, or in the mossy tussocks in the wet morasses which abound throughout Northern Europe, making no regular nest. The late Mr. Wolley found the eggs in Lapland in May, which seems to be the time of year when the eggs are usually deposited.

In Dresser's collection are two eggs of this species, both obtained in Lapland by the late Mr. Wolley's collectors. In size these eggs measured  $2\frac{1}{8}$  by  $1\frac{3}{8}$  and  $2\frac{1}{8}$  by  $1\frac{4}{8}$  inches respectively. In the one the ground-colour is light olive-green, and the markings, which are chiefly collected towards the larger end, are dark brown; and the other is dark olive-green, blotched with dull greenish brown. Dr. E. Rey gives the measurements of eggs in Mr. Schlüter's collection, obtained in Muonio-Lapland through Mr. Meves, as 50·5 by 38·0 and 50·0 by 36·0 millimetres.

The Bar-tailed Godwit feeds on minute insects and crustaceans which it picks up on the shores. Our friend Mr. Collett examined the stomachs of two shot near Christiania in September, and found them to contain larvæ of *Geometra*, *Lumbrici*, and small Crustacea.

The figures and descriptions of the adult male and young bird are taken from specimens in Dresser's collection, as is also the description of the young in first autumn; that of the female in breeding-plumage is from a specimen lent to us by Professor Newton, and that of the female in winter from a specimen placed at our disposal by Mr. Henry Durnford, of Liverpool.

In the preparation of the above article we have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a, b, c, d, e, f, g, h, males.* Pagham, May (*Grant*). *i, j, k, ♀.* Pagham, Sussex, May 1872 (*Grant*). *l, ♂.* Boel, Jutland, spring of 1871 (*Benzon*). *m, n, juv.* Rye, Sussex, September 8th, 1860 (*H. E. D.*). *o, p, juv.* Pagham, September (*Grant*). *q, pullus.* Muonioniska, Lapland, July 4th (*Meves*).

*E Mus. A. von Hügel.*

*a, ♂, b, ♀.* Hiddensee, Germany, September 1868 (*Schlüter*). *c, d, e, f.* Yarmouth, Norfolk. *g, h.* Christchurch, Hants (*A. v. H.*).

*E Mus. J. H. Gurney, jun.*

*a.* Greatham, Durham, September 9th. *b.* Norfolk, May 14th. *c.* Leadenhall Market, May. *d.* Leadenhall Market, January. *e.* Hickling, May. *f, g.* Leadenhall Market.

*E Mus. Lord Lilford.*

*a, b, ♂.* Locality? spring plumage (*A. Crichton*).

*E Mus. Cecil Smith.*

*a, b, ♂.* Leadenhall Market, May. *c, ♂.* Inston, September 23rd.

*E Mus. T. E. Buckley.*

*a.* Bura, September 16th. *b.* Gottenburg, August 26th (*T. E. B.*).

*E Mus. A. Newton.*

*a.* Denmark, October 1869 (*Kjærbölling*). *b, ♀.* Kylmesin-järvi-ranta, Lapland. *c. ?* (*Knight*).

*E Mus. A. B. Brooke.*

*a.* Dublin Bay, September 1870 (*A. B. B.*).



## LIMOSA ÆGOCEPHALA.

(BLACK-TAILED GODWIT.)

- Scolopax limosa*, Linn. Syst. Nat. i. p. 245. no. 13 (1766).  
*Scolopax ægocephala*, Linn. tom. cit. p. 246. no. 16 (1766).  
*Scolopax belgica*, Gm. Syst. Nat. i. p. 663. no. 39 (1788).  
*Totanus ægocephalus* (L.), Bechstein, Naturg. Deutschl. iv. p. 234 (1809).  
*Totanus limosa* (L.), Bechst. tom. cit. p. 244 (1809).  
*Totanus rufus*, Bechstein, tom. cit. p. 253 (1809).  
*Actitis limosa* (L.), Illiger, Prodrum, p. 262 (1811).  
*Limosa melanura*, Leisler, Nachtr. Bechst. Naturg. ii. pp. 150, 157 (1811–1815).  
*Limicola melanura* (Leisl.), Vieillot, N. Dict. iii. p. 250 (1816).  
*Limosa jadrega*, Leach, Syst. Cat. Brit. Mus. p. 32 (1816).  
*Limosa ægocephala* (L.), Leach, op. cit. p. 34 (1816).  
*Fedoa melanura* (Leisl.), Stephens, Gen. Zool. Aves, xii. part 1, p. 73, partim (1824).  
*Limosa islandica*, Brehm, Vög. Deutschl. p. 626 (1831).  
*Limosa melanuroides*, Gould, P. Z. S. xiv. p. 84 (1846).

*Barge à queue noire*, French; *Abujeta*, *Sarseruelo*, Spanish; *Maçarico gallego*, Portuguese; *schwarzschwänzige Uferschneppe*, German; *Grutto*, *Schries*, Dutch; *Kobberhøne*, *Rødvitte*, Danish; *Svartstjertad Långnäbba*, Swedish; *Evdoshka*, Russian.

*Figuræ notabiles.*

Albin, Nat. Hist. Birds, ii. pl. 70; D'Aubenton, Pl. Enl. 874, 916; Nozeman, Nederl. Vogel, 27; Naum. Vögel Deutschl. ii. f. 11; id. Vög. Deutschl. Nachtr. 37. f. 73, and neue Ausg. 212, 213, 214; Gould, Birds Eur. 305; id. Birds Gr. Brit. pt. xiv.; id. Birds Austral. vi. pl. 28 (*L. melanuroides*).

♂ *æstiv.* pileo colloque postico rufis, illo nigricante medialiter striolato, hōc irregulariter transnotato: dorso et scapularibus cinerascanti-brunneis, plumis quibusdam ferrugineo maculatis et nigro transfasciatis: uropygio conspicuè albo: supracaudalibus nigris, ad basin albis, extimis angustè albo terminatis: tectricibus alarum cinerascanti-brunneis, minimis saturatioribus, majoribus extūs latè albicantibus: remigibus nigris, intūs argenteo-albis, primariorum scapis albis: primariis interioribus extūs ad basin conspicuè albis, speculum formantibus, secundariis extūs latè albis, interioribus dorso concoloribus et eodem modo nigro et rufo fasciatim variis: caudâ nigrâ, rectricibus centralibus versūs apicem brunnescentibus et albo terminatis: mento ipso albo: gutture et pectore superiore rufis indistinctè nigricante fasciatis: corpore reliquo subtūs albo, saturatè brunneo transfasciato vix rufescente lavato: subalaribus et axillaribus albis immaculatis, carpalibus brunneis albo latè marginatis: rostro nigricanti-brunneo, ad basin aurantiaco: pedibus nigricantibus: iride brunneâ.

♀ *æstiv.* mari similis, sed magis cinerascens, dorso alisque vix rufo notatis: pileo colloque postico, gutture et pectore summo dilutiùs ferrugineis.

*Ptil. hiem.* suprà omninò cinerascanti-brunnea, alâ caudâque ut in ptilosi æstivâ coloratis, sed rufo haud notatis: loris et plumis supraocularibus albicantibus: subtùs albicans: gutture, pectore superiore et corporis lateribus cinerascantibus.

*Adult Male.* Head and neck rich ferruginous-red, the crown and nape striated with black, each feather having a black central line; feathers on the fore part of the back ferruginous, with a broad black bar near the tip, the feathers on the back and scapulars black, broadly barred with rich ferruginous; lower part of the back and rump blackish; upper tail-coverts pure white, forming a conspicuous white patch; tail black, the centre feathers tipped with grey, the outermost feather on each side having the basal half pure white; quills dull blackish, with white shafts, the outermost primaries having the basal portion of the inner web white, and the inner primaries white at the base; secondaries white at the base, having the terminal portion blackish, the median with the inner web only marked with blackish grey; the elongated secondaries dull greyish-brown, edged with sandy brown, the inner ones blackish, edged with ferruginous, and marked with ferruginous patches along the sides; wing-coverts dull earthy grey, the larger coverts with broad white tips; loreal space and chin dull grey, washed with rufous; throat to lower part of the neck and breast rich ferruginous red, the breast being indistinctly barred with black, and the feathers having narrow, hoary tips; rest of the underparts, from the lower part of the breast downwards, white, irregularly barred with black and rufous; flanks washed with rich rufous; under tail-coverts white, barred with blackish; axillaries and under wing-coverts white, a narrow line of feathers along the edge of the wing black; beak blackish brown, orange at the base; legs blackish; iris brown. Total length 15·8 inches, wing 8·0, tail 3·6, tarsus 2·8, culmen 3·9.

*Adult Female in summer* (Reykjavik, 26th June). Differs from the male in having the colours on the head and neck much duller; the back is devoid of the rich ferruginous and black markings, and is dull earthy grey, marked here and there with black and rufous, the scapulars and innermost secondaries are only to a small extent marked with black and ferruginous, as in the male; the feathers on the breast are duller in colour, and have the black bars only very irregularly defined; and the rest of the underparts are much whiter and less barred than in the male. In size the female somewhat exceeds the male, as will be seen from the comparative measurements given below.

*Adult Female in winter* (Ismidt, Asia Minor, 3rd January). Head, neck, back, and scapulars dark earthy grey, the head and neck being lighter, and the lower part of the back darker, the latter being slightly washed with earthy brown; rump blackish grey, upper tail-coverts pure white; tail black, white at the base, and narrowly tipped with white, the outermost feather on each side white from the base to nearly two thirds of its length, the terminal portion being black, the next white at the base; quills blackish, the feathers having white shafts, the inner primaries white at the base, and the outermost having the inner web white, except towards the terminal portion; secondaries white at the base, the remainder of the feather being blackish grey; the elongated inner secondaries earthy grey, washed with buff, the inner web edged with pale whitish grey; chin dirty white; throat, neck, and fore part of the breast pale earthy grey; flanks dull earthy grey, lower part of the breast, abdomen, under tail-coverts, axillaries, and under wing-coverts white, a line of blackish feathers round the edge of the wing; beak brownish flesh-coloured, blackish towards the tip; legs dusky black; iris dark brown.

*Young in first autumn* (Volga, August). Head dull brown, the feathers being edged with rufous buff; an indistinct light buff line passing from the base of the bill above and beyond the eye; neck dark buff; back earthy brown, with here and there a dark blackish brown feather, all being edged with dull rufous; lower part of the back blackish brown; rump and upper tail-coverts pure white; tail, as in the adult,

white at the base, black elsewhere, except at the tip, which in the central feathers is broadly, and in the others narrowly edged with greyish brown; quills dark greyish brown, with white shafts, narrowly tipped with dirty white; secondaries white at the base, the terminal portion blackish grey, except on the median ones, which have the inner web only marked with that colour; the elongated inner secondaries dark brown, edged with rufous buff, and notched with rufous; greater wing-coverts dull earthy grey, broadly tipped with white; median and smaller coverts dull brown, edged and tipped with greyish buff; chin dirty white, sides of head, neck, and breast dark buff; flanks washed with buff; abdomen, under tail-coverts, and axillaries white; under wing-coverts white, except a line round the edge of the wing, which is black, tipped with white.

*Young in down* (*fide* Meves). Covered with down; rusty yellow, marked with black, especially on the crown and rump; a narrow streak through the eye, wing-joints, cheeks, and belly light yellowish. Total length, excepting the long tail-down, 130 millimetres, beak 20, tarsus 37, middle toe 40.

*Obs.* In size we find considerable differences in the series of specimens before us; but the females are generally larger than the males. The measurements of the males are as follows—beak 3·7 to 4·2 inches, wing 8·0 to 8·2, tail 3·5 to 3·6, tarsus 2·8 to 3 inches; and of the females—beak 3·6 to 4·95, wing 8·2 to 9 inches, tail 3·6 to 3·8, tarsus 3·0 to 3·7. Messrs. Harvie Brown and Alston inform us that they examined a specimen in the Museum at Archangel which measured as follows:—beak 4·87 inches, wing 9·8, tarsus 3·8, middle toe 2·12.

*Obs.* The Godwits form one of the smallest groups amongst the Waders; and as it may perhaps be interesting to our readers to have a short review of the known species, we make the following remarks on those admitted by Mr. G. R. Gray in his well-known Hand-list, vol. iii. p. 43:—

10258. *Limosa egocephala*, L., may, as above stated, be known from all other Godwits by its axillaries, which, in all stages of plumage, are pure white.

10259. *L. lapponica*, L., has the axillaries barred with blackish grey, and therein differs from all other species, excepting *L. novæ-zealandiæ*—which differs from it but very little, in having the rump and upper tail-coverts barred, whereas in *L. lapponica* they are generally plain white.

10260. *L. melanuroides*, Gould, P. Z. S. 1846, p. 84, and Birds of Australia, vi. pl. 28, is probably only a small variety of *L. egocephala*, as it differs merely in being somewhat smaller in size.

10261. *L. uropygialis*, Gould, B. of A. vi. pl. 29, is identical with the next species.

10262. *L. novæ-zealandiæ*, G. R. Gray, Voy. Ereb. and Terror, Birds, p. 13, is the eastern representative of our *L. lapponica*, and is said to differ from it in having the rump and upper tail-coverts more barred; but the differences are very slight, as we have specimens shot at Pagham harbour, and purchased in the flesh in Leadenhall Market, which have the rump nearly as much barred as in typical specimens of *L. novæ-zealandiæ*, which have been kindly placed at our disposal for examination by Mr. J. E. Harting. This form of *L. lapponica* was found breeding by Von Middendorff in Northern Siberia; and, according to Mr. Buller, it visits in the course of its annual migration the islands of the Indian archipelago, Polynesia, Australia, and New Zealand.

10263. *L. fedoa*, L., is a large, yellowish-rufous-coloured Godwit, which may in all plumages be distinguished by its bright rufous axillaries, which are narrowly barred with black. It inhabits the temperate parts of the Nearctic region, ranging southward into South America.

10264. *L. hudsonica*, Latham, Ind. Orn. ii. p. 720. This species is the Black-tailed Godwit of America, and differs from our *L. egocephala* in having the axillaries black instead of white, the neck brownish grey instead of chestnut, and the abdomen rich ferruginous; in size it is smaller than *L. egocephala*, and about equal to *L. lapponica*. It inhabits Northern and North-eastern America.

THE present species has a more extended range than the Bar-tailed Godwit, but appears to be distributed more to the south and west during the breeding-season than that bird. In former years it used to breed in England, but is now in all probability only found with us during the seasons of migration, and is by far less numerous than the Bar-tailed Godwit. Mr. More writes that "until lately a few pairs were accustomed to breed annually in the fens of Norfolk, Cambridge, Huntingdon, and Lincoln; but it is believed that the birds have now nearly deserted their former haunts, Norfolk being the only county in which there is a possibility that a pair or two may linger occasionally. The late Mr. H. Reid, of Doncaster, has frequently told me that the Black-tailed Godwit used, within his recollection, to breed on Hatfield Moor, in which locality he once found the young birds himself." It occurs on our coasts during the autumn and spring, but is somewhat rare. Mr. Rowe records it as rare on the Exe in the autumn and winter(?); and Dresser has on several occasions obtained it on the coasts of Kent and Sussex in the autumn.

In Scotland it is, according to Mr. R. Gray, strictly a winter visitant, and only of rare occurrence in any part of the country. One was shot near Dumbarton in November 1867; another near Castle Temple, Renfrewshire, in August 1869. It has also been obtained in Forfarshire and Aberdeenshire. It is said to have occurred as far north as Greenland; but only two instances of its occurrence are on record. Professor Reinhardt writes, "Fabricius mentions that he had seen a single specimen (Fn. Gr. p. 107); and after his time the bird is said to have been obtained once more, nearly forty years back, at Godthaab; the specimen was sent to the Royal Museum, but seems not to have been preserved; at least, I have not been able to find it." It is found in Iceland, where it arrives, according to Faber, the last week in April. Professor Newton thinks there is little doubt about its breeding there. It seems to be rare, if it occurs at all, in the north of Iceland. Captain Feilden saw one at Thorshavn, in Færoe, which had been killed in May this year (1872); and Mr. H. C. Müller informed him that it had been known on one occasion to breed on that island. In Scandinavia it is far less numerous than the Bar-tailed Godwit, especially in the north—though, according to Mr. R. Collett, "it breeds sparingly in Finmark, where Professor Esmark procured it in July 1866; but it is generally observed there in the spring and autumn. In the southern part of Norway a single example was shot near Fredrikshald in the spring of 1860." Nilsson writes that "it breeds near Gothenburg. In Bohuslän it arrives in small numbers in April and May, remaining till the end of May, and returning in July." In Finland it is rare; and Dresser never met with it. Professor Malmgren writes to him that "when on a trip to the mouth of the Tana Elf in August 1871, I observed in about  $68\frac{1}{2}^{\circ}$  N. lat., near Skjetschamjok, a bird which I believed to be this species."

Sabanäeff writes that it is rare in the Governments of Jaroslaf and Moscow, in Northern Russia, and that he "never met with it on the eastern slope of the Ural, where it occurs perhaps only during the spring migration; but on the western side Teplouhoff met with it breeding as high as  $58\frac{1}{2}^{\circ}$  N. lat. In the valleys of South-eastern Perm it is common as high as  $56\frac{1}{2}^{\circ}$  N. lat., and probably breeds in the Kamishlovsky district as high as  $57^{\circ}$  N. lat." In Poland, Dr. Taczanowski informs us, it is common during the breeding-season in the marshes of the Vistula; and Meyer writes that it breeds in Esthonia and Livonia. It is a rare migrant on the coasts of North Germany; and Borggreve states that it is found, though not commonly, on the moors of

Oldenburg and Friesland during the summer season, and he found several pairs breeding in Upper Silesia. In Denmark, according to Kjærbølling, it is most numerous during migration—in August and September, and in April and May. A few remain to breed on the west coast of Jutland. Mr. Benzon writes that “it breeds in Jutland;” and we give below some notes he has kindly sent to us on its nidification; he informs us that, besides its common Danish name of *Kobberhane*, it is usually called *Rædritte* on the peninsula. It is common in the coast provinces of Holland during the breeding-season, arriving late in April, and leaving again as soon as the young can fly; numbers of eggs are sent over from Holland to the London markets, where they are sold with Plover’s eggs. In Belgium it is found during the seasons of migration; and, as stated by Degland and Gerbe, it passes through France in March and April, and again in September and October. The Rev. A. C. Smith records it as common in Portugal; and in Spain, according to Mr. Howard Saunders, it is not uncommon in winter, and abundant in March when on passage. Major Irby writes to us that “the Black-tailed Godwit, known at Casa Vieja as ‘Abujeta,’ is seen there in some years in immense flocks in February and the beginning of March. The latest I noticed in spring was on the 6th of April. I have no date of the return migration, but killed one, a solitary bird, as late as the 5th of December at Tapatanilla. One killed on the 24th of February was far advanced in breeding-plumage, others killed the same day being in almost winter dress. Great numbers are brought into Seville in March for sale.”

Von Homeyer states that it breeds on the Balearic Islands, but is not common; on the Prat a few pair may always be seen; and, according to Vidal, it is common on the Albufera. According to Bailly it is “occasionally observed in Savoy during migration, passing very rapidly, and seldom remaining any length of time, but merely to seek for food. Salvadori records it as occurring in Italy during migration both in the spring and the autumn. Doderlein states that it visits Sicily and Sardinia annually; and Giglioli refers to it as abounding near Pisa in March and April. Mr. C. A. Wright states that it is not very common in Malta, where it passes early in the spring and autumn, and also in the months of January and February, when it is in winter plumage. Lindermayer includes it as “a winter resident in Greece, leaving again early. It is, like many other migrants, commoner during the spring migration. On the islands it has not occurred.” According to Lord Lilford it comes to the Ionian Islands “sparingly in winter. More common on the Gulf of Arta than in any other locality with which I am acquainted.” We have received examples from Mr. Robson which were killed near Constantinople in the winter; and it also occurs in Asia Minor during its migrations. Professor von Nordmann writes that it “arrives in New Russia early in March, and is common. It breeds in many localities in Bessarabia and in the Government of Cherson.” Passing southward we find it in Northern Africa. Heuglin obtained it in Abyssinia; and Captain Shelley shot two out of a flock near Sakkara, on the 7th of April. According to Loche it arrives in Algeria in the autumn, leaving again in the spring; and Major Irby writes to us that it is abundant in Morocco in February and March; it is also recorded as an occasional visitant to the Canaries. To the eastward this species is found through Siberia and India to China, Japan, and North Australia. Dr. Gustav Radde observed large flocks in Siberia, at Tarei-nor, on the 12th of May, 1856, but lost sight of them during the summer. At Altansk, on the 30th of July, large flocks of old and young birds had collected preparatory to leaving. On the 12th of August they passed Tarei-nor on their

southward migration. Von Middendorff found it breeding on the large Schantar Island, and procured full-grown young birds on the 11th of August. According to Dr. Jerdon it is met with throughout India during the cold weather, generally in large flocks at the edge of the water; and Mr. R. Swinhoe writes that it is "said to be found on lakes and inland marshes of China, whence it is brought to the Tientsin and Shanghai markets in winter. It is probably from Mantchuria that these birds come, spreading down to the Indian archipelago southwards, and eastwards to North Australia, to both of which places they resort in winter. Temminck and Schlegel note it from Japan." Mr. Swinhoe afterwards obtained a specimen at Amoy in partial summer plumage on the 13th of April.

Respecting the nidification of this Godwit, we translate the following notes contained in a letter received from our friend Dr. L. Taczanowski, of Warsaw:—"In Poland large numbers breed in two marshy localities on the eastern part of the Vistula, in the Government of Lublin, on the vast marshes between the rivers Wiperz and Bug, and on the marshes by the canal of Augustow. It also breeds in some parts of the Government of Plock, but in fewer numbers, and in other portions of our country is only rarely seen during migration. In the spring, when the snow disappears, they arrive in the marshes and frequent the edges, waiting until the water leaves their nesting-places. Usually they begin breeding early in May, and about the middle of June young may be found fully fledged. They generally breed in large societies, in tolerably damp places covered with high thin herbage where there are tussocks or small dry places, but also in the fields (in scattered pairs or small colonies), and in small marshes covered with grass and bushes. On the top of a tussock or a dry place they make a depression about three inches deep, and line it carefully and neatly with dry grass, depositing four eggs, which both male and female sit on. If a human being approach their nesting-colony, they meet him when some distance from it, uttering loud cries, and returning again and again in larger numbers as he comes nearer to their nests. When he is amongst the nests all the birds fly overhead uttering a continual lamentation. If the intruder remains there any time, they become tamer, and a few return to their eggs, especially if the latter are hard-set. Before they have eggs they are very shy, rarely approaching within gunshot; but when the young are hatched they are most courageous, and will come within a few feet of the intruder, not even retreating when fired at, and dozens may be killed. They will attack a cow or horse if they approach their breeding-places, and attack and pursue any bird of prey or Crow that may pass near. When the young have attained a good size the parents take them to some other place, generally to the fields or shores of the lakes, where they assemble from all parts, and leave when old enough to do so. This is the best time to shoot them, as both parents and young fly near the sportsman, the latter not calling. All the families, when strong enough on the wing, assemble and leave us very quickly, in small flocks, only stragglers remaining as late as July."

Mr. A. Benzon, who met with it nesting in Denmark, informs us that "it breeds on the west coast of Jutland, where it was formerly much more numerous than it is now. From thence I have the young in down, taken on the 25th of June 1864, and several eggs. It lays four eggs; and the earliest taken were obtained on the 12th of April, and the last on the 4th of July; but they are usually deposited about the beginning of May. They measure from 48 by 37 to 56 by 38 millimetres. A pale variety, almost white, tinged with pale brown, is marked with violet shell-

markings, spotted with brown, and measures 52 by 35 millimetres; and another, bluish white in colour, marked with fine brown spots, and with scarcely any shell-markings, measures 50 by 35 millimetres." Eggs in Dresser's collection from Holland are dull greenish in colour, indistinctly marked with dark brownish olive, and in shape are pyriform. Numbers of the eggs of this Godwit are brought from Holland and sold in Leadenhall Market; and occasionally handsome varieties may be picked out of a lot; but generally speaking they vary but little. Dr. Rey gives the average size of fifty eggs in his collection as 54·3 by 37·3 millimetres, the largest measuring 59·75 by 37·75, and the smallest 52 by 35 millimetres respectively.

The specimen figured in summer plumage on the same Plate with *L. lapponica* is an adult male out of Dresser's collection; and that on the other Plate in winter plumage is the bird procured in Asia Minor by Mr. Robson, and is also in his collection. The specimens described are also in Dresser's cabinet, excepting the female in summer plumage, which was kindly placed at our disposal by Professor Newton.

In the preparation of the above article we have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a, b*, ♂. Leadenhall Market, April. *c*, ♂. Bokhara (*Verreaux*). *d*, ♀. Ismidt, Asia Minor, January (*Robson*). *e, juv.* Volga, August (*Möschler*).

*E Mus. A. Newton.*

*a, ♂, b*, ♀. Reykjavik, June 26th (*A. N.*).

*E Mus. J. H. Gurney, jun.*

*a, b*, ♂. Leadenhall Market. *c*, ♀. Hickling, May. *d*, ♀. Shetland (*Saxby*). *e*, ♀. Leadenhall Market, March 27th.

*E. Mus. G. E. Shelley.*

*a, b*, ♀. Egypt, April (*G. E. S.*).

*E Mus. J. E. Harting.*

*a*, ♂. Leadenhall Market, May 1864. *b*, ♀. Bishopstowe, Sussex, September 1865. *c*, ♂. Pagham Harbour, May 1865. *d, e*, ♂, ♀. Conway Island, April 23rd, 1868 (*J. E. H.*). *f, g*, ♂, ♀. Holland, April 29th, 1870 (*J. E. H.*). *h*, ♂. Kustendji, Turkey, July 4th (*Cullen*). *i*. India, summer plumage (*Blyth*).



## Genus NUMENIUS.

*Numenius*, Brisson, Orn. v. p. 311 (1760).

*Scolopax* apud Linnæus, Syst. Nat. i p. 242 (1766).

*Phæopus* apud Stephens in Shaw's Gen. Zool. xii. p. 36 (1824).

*Cractiornis* apud G. R. Gray, List of Gen. of B. p. 88 (1841).

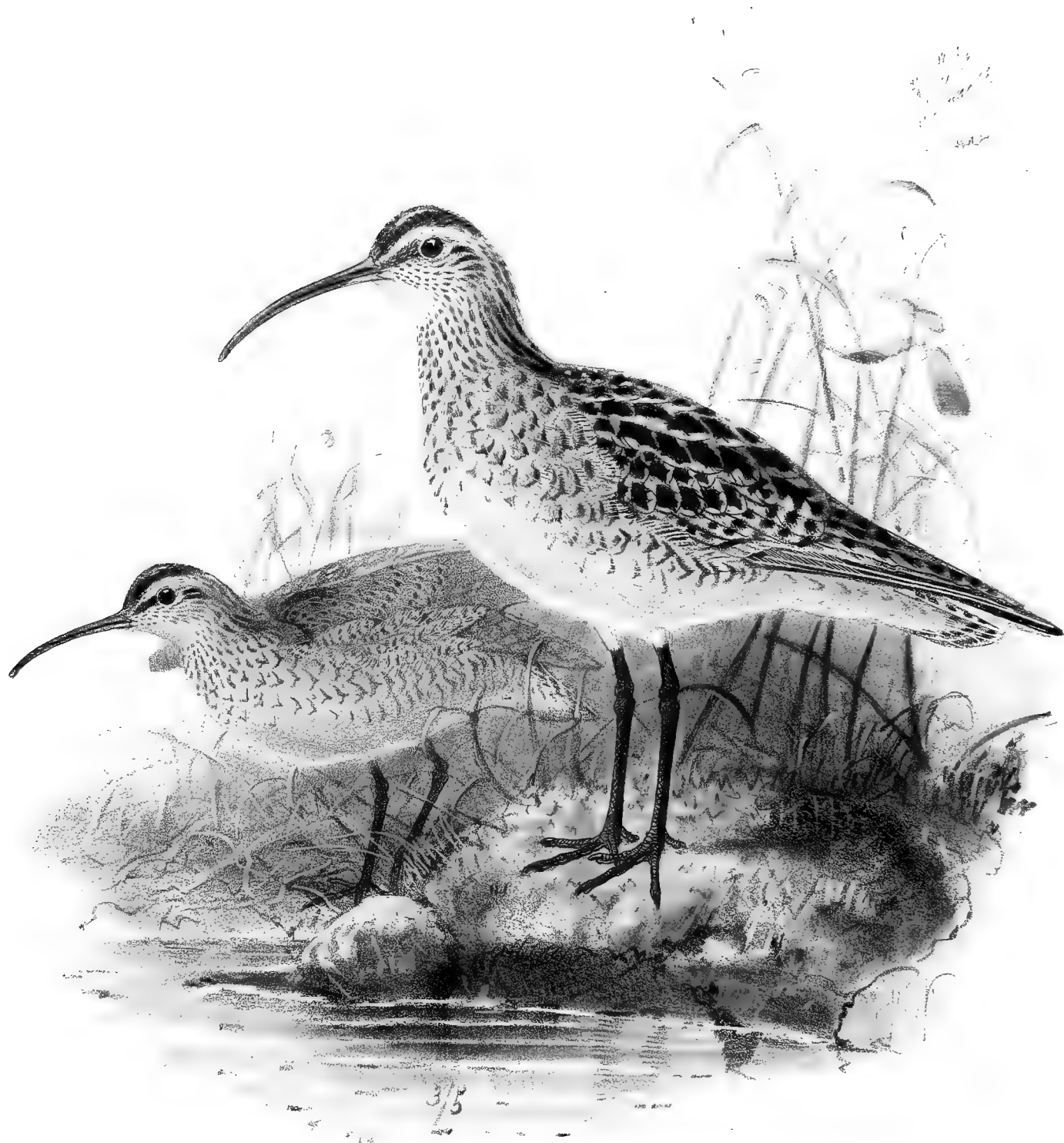
THIS genus is widely distributed, being found in the Palæarctic, Ethiopian, Oriental, Australian, Nearctic, and Neotropical Regions, three species being common and resident in the Western Palæarctic Region, the fourth (*Numenius borealis*) being a rare visitant from the American continent.

These birds frequent moors, inland bogs, and uplands during the summer season, being found more frequently on the sea-coasts during passage and in winter. They are extremely shy and wary, and at the least sign of danger fly off uttering their loud, weird cry. During the breeding-season they scatter about the wild moors in pairs, but in the autumn and winter they collect in tolerably large flocks. They walk and run with ease and rapidity, and their flight is strong and tolerably swift. They feed on insects, worms, small crustacea, and snails, both inland and aquatic species. They nest on the moors and also in marshy localities, placing in a depression in the ground or moss, or on a tussock, their four eggs, which are pyriform in shape, and pale olivaceous-grey or dull olivaceous, spotted and blotched with dark brown and light purplish brown.

*Numenius arquata*, the type of the genus, has the bill very long, curved, rather broader than high at the base, and tapering to the tip, which is obtuse, the upper mandible with a small sulcate knob, in the depression of which the lower mandible fits; both mandibles grooved, the upper one nearly to the tip; nasal groove long, narrow; the nostrils linear, pervious, basal; wings long, pointed, the first quill longest, the inner secondaries nearly as long as the primaries; tail moderate, slightly rounded; legs long, slender; tibia bare for nearly half its length, reticulated; tarsus also reticulated, but having anteriorly a series of short scutellæ for nearly two thirds of its length; toes slender, rather short, hind toe small, the anterior toes with flattened papillæ in transverse rows below, and webbed at the base to the first joint; claws small, obtuse, slightly arched, that on the middle toe with the inner edge slightly dilated.







ESQUIMAUX CURLEW.

NUMENIUS BOREALIS

## NUMENIUS BOREALIS.

(ESQUIMAUX CURLEW.)

*Scolopax borealis*, Forst. Phil. Trans. lxii. p. 411 (1772).

*Numenius borealis*, Lath. Ind. Orn. ii. p. 712 (1790).

*Numenius brevirostris*, Licht. Verz. Doubl. p. 74 (1823).

*Numenius microrhynchus*?, Phillippi & Landb. Wieg. Arch. 1866, p. 129.

### *Figuræ notabiles.*

Temm. Pl. Col. v. pl. 381; Sw. and Rich. Faun. Bor.-Am. p. 378, pl. lxx.; Aud. B. Am. fol. pl. 208, et ed. 8vo, vi. pl. 357.

*Ad. suprà* brunneus, dorsi plumis fulvo minutè maculatis, scapularibus et secundariis intimis magis distinctè fulvo marginaliter notatis: collo postico fulvescentiore, plumis medialiter brunneis, utrinque fulvo latè marginatis: tectricibus alarum remigibusque brunneis, extùs dilutè fulvo limbatis, secundariis scapularibusque concoloribus et eodem modo maculatis: supracaudalibus et rectricibus alternè fulvo et brunneo transfasciatis: pileo summo saturatè brunneo, vertice medialiter fulvo: supercilio distincto fulvescenti-albido: facie laterali et collo undique lætè fulvescentibus brunneo lineatis: genis gulâque albis: corpore reliquo subtùs lætè fulvescente, pectore et hypochondriis fasciis fulvis sagittiformibus distinctè notatis: subalaribus et axillaribus fulvescenti-rufis, brunneo transfasciatis: rostro brunnescenti-nigro, mandibulâ ad basin flavicanti-carneâ: pedibus virescenti-brunneis: iride nigrâ.

*Adult Male* (Labrador, 23rd of August). Crown dark umber-brown, marked here and there, especially on the forehead and along the centre, with creamy buff; neck, back, and scapulars dark umber, the feathers of the first broadly margined with dull creamy white, those on the back and scapulars margined and notched with dull cream-colour, the latter washed with pale rufous, quills dark earth-brown, shafts white; the upper wing-coverts being margined with greyish brown; tail dull brown, slightly washed with rufous and barred with dark umber-brown; sides of the face white, with small stripes of dark brown; a dark line passing through and behind the eye, throat pure white; breast and underparts generally pale rufous-buff, the centre of the abdomen being almost white, and the flanks rufous, the upper part of the breast marked with dark brown stripes, which on the lower portion of the breast and on the flanks are for the most part V-shaped; under wing-coverts and axillaries rich rufous, barred with blackish brown; under tail-coverts rufous-buff, likewise barred with dark brown; beak brownish black; base of under mandible yellowish flesh-colour; legs greenish brown; iris black. Total length 13·5 inches, wing 8·0, tail 3·4, tarsus 1·8.

*Obs.* Wilson's *Scolopax borealis* is the American Whimbrel (*N. hudsonicus*); and all he observes of its abundance and habits in the Middle States refers to the latter species, although his quotations of Pennant relate to the *N. borealis*. He uses, indeed, the words "Esquimaux" and "Short-billed" Curlew, quotes references to the true *borealis* &c.; but his description (18 inches long and 32 in extent; bill  $4\frac{1}{2}$  inches) is obviously that of *N. hudsonicus*.—Dr. COUES in *epist.*

LIKE other American species which have from time to time been obtained on this side of the

Atlantic, the Esquimaux Curlew cannot be admitted into the European avifauna, except as a very rare straggler, having only been procured in the British Islands, doubtless driven thither by adverse weather when migrating. Mr. Harting records four instances of its occurrence in Great Britain:—one near Stonehaven, Kincardineshire, 6th of September, 1855, this being the specimen referred to by Yarrell; one near Aldeburgh, Suffolk (*Hele*); one near Woodbridge, Suffolk, now in the possession of Mr. Hilling, of Woodbridge; and one purchased in Dublin, in the flesh, 21st of October, 1870, now in the collection of Sir Victor Brooke, Bart., this last having been shot in Sligo. Sir Victor Brooke exhibited this specimen at a Meeting of the Zoological Society, where we had an opportunity of examining and comparing it with skins from North America in Dresser's collection.

This diminutive Curlew has occurred in Greenland, which may, to some extent, explain its presence in this country; but it has only been met with twice there. Professor Reinhardt, in his notes on the birds of Greenland, published in 'The Ibis' for 1861, writes (p. 10) that "the Royal Museum possesses two specimens of this little Curlew, which indeed were not received directly from the Museum's own collectors, but bought at second-hand here in Copenhagen. I have no doubt about their Greenland origin; and they are, I believe, the only specimens ever obtained there. One of them was brought from Greenland in 1858, and is said to have been shot at Julianshaab; about the other I know no particulars." Canon Tristram has lent us a specimen for examination which he himself shot on the Bermudas, where this species occurs. Its true home is America, where it is found during the breeding-season in the extreme north, and at the approach of autumn migrates southwards, returning again to the north in the spring. Captain Blakiston speaks of it as frequenting barren lands within the Arctic circle during the summer season, and states that it has been obtained on the Mackenzie river (*Bernard Ross*); and one specimen was recorded in the Faun. Bor.-Am. as having been procured from the Rocky Mountains. Dresser met with it in Texas, near San Antonio de Bexar, in the early spring; Mr. Salvin records it from San Gerónimo, in Central America, whence a single specimen was sent home by Mr. R. Owen; Natterer found it in Brazil, at Ypanema Lagoa do Campo largo in September and October, at Xavier in October, and procured eleven examples on the Amazon in September; according to Darwin it occurs at Buenos Ayres; and Lichtenstein obtained it from Montevideo. We are indebted to our friend Dr. Elliott Coues for a *résumé* of the information published in America respecting this species, as well as some excellent original notes, the result of his own observations. In a letter to Dresser Dr. Coues writes as follows:—

"Sir John Richardson says, 'This Curlew frequents the barren lands within the Arctic circle in summer, where it feeds on grubs, freshwater insects, and the fruit of *Empetrum nigrum*. Its eggs, three or four in number, have a pyriform shape and a siskin-green colour, clouded with a few large irregular spots of bright umber-brown. . . . On the 13th of June, 1822, I discovered one of these Curlews hatching on three eggs on the shore of Point Lake. When I approached the nest she ran a short distance, crouching close to the ground, and then stopped to observe the fate of the objects of her care' (F. B.-A. ii. p. 378). This is the only note on the breeding of the bird I have at hand; it shows the highly boreal summer resort of the species, like that of most limicoline *Grallæ*. Mr. Dall, indeed, remarks upon its occurrence at Fort Yukon, further observing that it has not been found south or west of that point; but he omits to give the

season (Tr. Chicago Acad. i. p. 293). The strictly hyperborean breeding-range is further substantiated by the fact that even in Labrador the bird is only known during migrations.

“Westward of the Rocky Mountains the records, so far at least as I know them, are silent. In other portions of the continent, they are numerous but disconnected, though we may, perhaps, string them together intelligibly. We first observe that from its Arctic breeding-grounds the bird pours in countless thousands southward along the Atlantic coast, reaching Labrador early in August, fairly swarming there for a month, and then departing. This is, in fact, one of the earliest items (*Pennant &c.*), already ‘classic,’ and since amply confirmed. From Labrador and Newfoundland the hordes sweep southward, along the Atlantic coast, in September; but what becomes of them is the question. As I remarked on a former occasion (Pr. Essex Inst. v. 1868, p. 296) in giving the bird as a New-England migrant, ‘it is singular that this species should not be abundant in New England, considering the almost incredible numbers that take their departure for the south from Labrador in early autumn.’ This is supported by abundant testimony. Thus Mr. G. A. Boardman says it is a ‘rare’ migrant at Calais, Maine (Pr. Bost. Soc. ix. p. 129). Mr. J. A. Allen makes the same remark, referring to the Massachusetts coast (Pr. Ess. Inst. iv. p. 87). Still southward, the Rev. Dr. Turnbull says it is ‘rather rare’ on the New Jersey coast (B. East Penns. and N. J. 1869, p. 33). We may gather from such indications (which could be multiplied were this desirable) that the Curlew passes swiftly on to fulfil the conditions of its autumnal impulse, and to settle at once in its winter quarters. With so much for the Atlantic coast-line of migration, we will turn to the interior; for the bird is by no means exclusively maritime at any season. We note it from the Upper Missouri river, where, says Dr. Hayden, our principal authority on the region, ‘it is not uncommon . . . our specimens were taken near Fort Union’ (Rep. on Geol. &c. 1862, p. 175). Mr. J. W. Wheaton includes it among the birds of Ohio, but without comment (Ohio Rep. Agric. for 1860). Mr. Allen found it migrating in Kansas in June (Bull. M. C. L. iii. 1872, p. 181). You are yourself, of course, personally informed of the occurrence of the bird in Texas. Audubon mentioned this locality in giving what appears to be, on the whole, a good summary of the distribution of the species (B. Amer. vi. p. 48). ‘Passes in spring from Texas along the coast eastward to the Fur Countries, returning in autumn. Abundant at times in the Middle Atlantic districts. Rarely seen in the interior. Breeds in the Northern Barren Grounds.’

“It is stated by Mr. Allen (*op. et loc. cit.*) that this Curlew is seen ‘occasionally in winter on the coast’ of Massachusetts—an assertion which I scarcely doubt; for Mr. Allen is thoroughly reliable, but which, I will add, is unchecked by other observations. The same writer includes it among the winter-birds of Florida (Bull. M. C. Z. ii. 1871, p. 356), but mainly, it appears, upon the strength of my own statement (Pr. Bost. Soc. xii. 1868, p. 123) of its occurrence at that season in South Carolina, adding, very properly, that the species is known to range in winter southward into the tropics. But I am not entirely satisfied that my information was sufficient; and, for all that appears, we may believe that the Esquimaux Curlew, as a rule at least, withdraws entirely from the United States in the fall, to enter it again in the spring. Of its extra-limited occurrences I have nothing to say; but doubtless some of your other correspondents—very likely our mutual friend Mr. Salvin—will supply the desired information.”

In Asia there is a small Curlew, several specimens of which were sent over by Messrs. Dybowski and Parvex, who obtained them in Dauria; and we are indebted to our friend M. Jules Verreaux for the opportunity of examining and comparing them with skins of *N. borealis*. This small Asiatic species (*Numenius minor*, Schl.) is very closely allied to the Esquimaux Curlew, but is much smaller in size. In treating of the Curlews as a family, we give full particulars as to the geographical range of this as well as the other species.

Regarding the habits of the Esquimaux Curlew, we again quote our friend Dr. Elliott Coues, who, in the letter above referred to, writes that "it is no exaggeration to say that I have had many thousands of these birds under my eye at once; and I saw great numbers every day in Labrador, from the 16th of August until towards the end of the month, when they disappeared as suddenly as they arrived, in both cases flying swiftly in flocks of immense extent. Audubon noted a different period—from the end of July until the middle of August; and he accounted (correctly, I think) for their stay in this country 'by the density of the mists and the heavy gales that already gave intimation of the approaching close of summer; for whenever the weather cleared up a little, thousands of them set off and steered in a straight course across the broad Gulf of St. Lawrence. On the contrary, when the wind was high, and the fogs thick, they flew swiftly and low over the rocky surface of the country, as if bewildered.' Their mode of departure, as I witnessed it, was much as Wilson describes. Just before they all left, they were to be seen, mostly very high in the air, in straggling flocks of extended front, moving directly southward.

"Though the Curlews flock at this season in bands of every size, it is not ordinarily practicable to shoot many at one discharge; they fly too loosely—excepting perhaps when they wheel, and, closing somewhat together, offer a more favourable opportunity to the gunner. The ordinary flight is firm, regular, and direct, with uninterrupted wing-beats: when skimming down to alight, however, they hold the wings stiffly expanded, recurved, and motionless for a little distance; as they touch the ground the wings are raised almost perpendicularly with a peculiarly graceful movement, and then slowly folded, as if the bird were very particular about getting them set precisely even. They have a clear, mellow whistle, often sounded several times in succession: it is readily imitated; and the mimicry may be successfully employed to allure a passing flock within range. When, as often occurs, the whole of a large band is whistling together, the confusion of sound has a very peculiar effect. Wounded birds, pursued or captured, have a harsh scream of terror and pain. Considering their vast numbers, they were not so readily bagged as might have been expected; a few dozen would represent a good morning's operations. I found that skulking pursuit of the feeding flocks was not nearly so advantageous as the simpler and easier method of lying in wait for passing troops in some sheltered spot between good feeding-grounds; for when not migrating they fly low and are readily knocked over—while, moreover, they cling pertinaciously to particular spots where food is plenty, as if aware that they must by generous living put themselves in good trim for their long journey. Their principal and favourite food at this season is the purplish black berries of the *Empetrum*, which covers the ground of the region: not only the bill and feet, but parts of the plumage, and the whole alimentary canal, are usually found stained purplish with the juice of this fruit. They also eat a small univalve that adheres to the seaweedy rocks in astonishing profusion; and with such abundance of pro-

vision they become very fat, affording an agreeable change in the diet of 'salt-horse,' 'hard-tack,' and 'slum-gullion' that the average *voyageur* to Labrador endures."

Audubon, who met with the Curlew in numbers in Labrador, writes that "wherever there was a spot that seemed likely to afford a good supply of food, there the Curlews abounded, and were easily approached. By the 12th of August, however, they had all left the country. In Labrador they feed on what the fishermen call the Curlew-berry, a small black fruit growing on a creeping shrub not more than an inch or two in height, and so abundant that patches of several acres covered the rocks here and there. When the birds were in search of these feeding-grounds they flew in close masses, sometimes high, at other times low, but always with remarkable speed, and performing beautiful evolutions in the air. The appearance of a man did not seem to intimidate them; for they would alight so near us, or pass over our heads at so short a distance, that we easily shot them. While on wing they emitted an oft-repeated whistling note; but the moment they alighted they became silent. They ran swiftly along, all in the same direction, picking up the berries in their way, and when pursued would immediately squat in the manner of a Snipe or Partridge, sometimes even laying the neck and head quite flat on the ground, until you came within a short distance, when, at the single whistle of any one of the flock, they would all immediately scream and fly off, rambling about for awhile, and not unfrequently realighting on the same spot. Now and then, however, their excursion would last a long time; they would rise high in the air, make towards the sea, and, as if aware of the unfavourable state of the weather for pursuing their southward course, would return. They continued to arrive at Bras d'Or for several days, in flocks which seemed to me to increase in number. I saw no Hawks in their rear; and I was the more astonished at this, as at that period Pigeon-Hawks and other species were pretty abundant. They rose from the ground by a single quick spring, in the manner of a Snipe, when they would cut backward, forward, and all around, in a very curious manner, and would now and then pause in the air, like a Hawk, remaining stationary for a few moments, with their head meeting the wind, when immediately afterwards they would all suddenly alight. In calm and fair weather they were more shy than at other times. While on their passage across the Gulf they flew high, in close bodies, and with their usual speed, by no means in regular lines, nor in any order, but much in the manner of the Migratory Pigeon, now and then presenting a broad front, and again coming together so as to form a close body. Those which we procured were extremely fat and juicy, especially the young birds, of which we ate a good many. Mr. Jones, an old settler of Bras d'Or, and his son shoot a great number every season, which they salt for winter food. They informed us that these birds pass over the same tract about the middle of May, on their way northward, and that they never found them breeding in their neighbourhood. Little difference could be observed at that season between the males and females, or between the old and young birds." Audubon, having remarked that they feed on berries, states that they also eat grasshoppers. In Labrador they are called "Dough-birds," owing probably to their fatness; but this name is also applied to several other birds.

In Dresser's collection is an egg of this Curlew, received from the Smithsonian Institution of Washington, U.S., with particulars—to the effect that it was taken, during McFarlane's expedition, on the Barren Grounds east of Anderson River, Arctic America, on the 12th of June, 1864, and the parent bird shot; the nest was composed of withered leaves, placed in a depression

in the ground, and contained two eggs. The ground-colour of this egg is pale stone, washed with dull green; and the markings, which are scattered all over the surface of the egg, consist of pale purplish underlying shell-blotches, and rich dark reddish brown overlying surface-spots. In general appearance it resembles some varieties of the eggs of the Greenshank, but is, of course, much larger, measuring  $2\frac{5}{40}$  by  $1\frac{1}{2}$  inches. We have also examined four eggs in Mr. Henry Buckley's collection, obtained from the Smithsonian Institution. These eggs were taken at Anderson-River Fort, on the 13th of June, 1863, during McFarlane's expedition to Arctic America; and the female bird was snared on her nest.

The specimen described and figured is in Dresser's collection; particulars as to locality are given above.

In the preparation of the above article we have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Labrador, August 23rd, 1860 (*Dr. Coues*). *b*. Texas, 1861 (*Dr. A. L. Heermann*). *c*. Henley Harbour, August 25th (*Dr. Coues*).

*E Mus. H. B. Tristram.*

*a*. Bermudas, 1848 (*H. B. T.*).

*E Mus. Sir V. Brooke.*

*a*. Sligo, Ireland, October 1870.

*E Mus. Salvin and Godman.*

*a*, ♂. Xavier, Brazil, October 7th, 1826 (*Natterer*). *b*, ♂. San Gerónimo, April 1860 (*R. Owen*). *c*, ♀. Henley Harbour, August 23rd (*Dr. Coues*).





WHIMBREL  
*NUMENIUS PHAEOPUS*  
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## NUMENIUS PHÆOPUS.

(WHIMBREL.)

- Numenius minor*, Briss. Orn. v. p. 317 (1760).  
*Scolopax phæopus*, Linn. Syst. Nat. i. p. 243 (1766).  
*Courlis tacheté de l'île de Luçon*, Sonn. It. p. 85 (1776).  
*Le Corlieu*, Buff. Pl. Enl. viii. p. 377, pl. 123 (1783).  
*Numenius luzoniensis*, Gm. Syst. Nat. tom. i. pt. ii. p. 656 (1788).  
*Numenius phæopus*, Lath. Ind. ii. p. 711 (1790).  
*Numenius atricapillus*, Vieill. Nouv. Dict. viii. p. 303 (1817).  
*Phæopus arquatus*, Steph. Gen. Zool. Aves, xii. p. 36, pl. 5 (1824).  
*Numenius uropygialis*, Gould, Pr. Zool. Soc. viii. p. 175 (1840).  
*Numenius melanorhynchus*, Bp. Comp. Rend. xliii. p. 1021 (1856).  
*Numenius hæsitatus*, Hartl. Orn. Westafr. p. 233 (1857).

*Whimbrel*, *Little Curlew*, *Tang Whaap*, *May Fowl*, *Half-Curlew*, *Curlew-Jack*, English ;  
*Eun-bealltuin*, Gaelic ; *Courlis*, *Courlieu*, French ; *Maçarico*, Portuguese ; *Zarapito menor*,  
Spanish ; *Chiurlo piccolo*, Italian ; *Regenbrachvogel*, German ; *Regenwulf*, Dutch ; *Lille*  
*Regnspove*, *Regnspove*, *Middelspove*, *Österfugl*, Danish ; *Spoi*, Icelandic ; *Spegvi*, Færoese ;  
*Smaaspove*, Norwegian ; *Småspof*, *Qvidbonde*, Swedish ; *Kulik*, Russian.

*Figuræ notabiles.*

Brisson, tom. cit. pl. 27. fig. 1 ; Sonnerat, tom. cit. pl. 48 ; Werner's Atlas, *Gralles*, pl. 6 ;  
Buffon, Pl. Enl. pl. 842 ; Stephens, tom. cit. pl. 5 ; Naumann, Vög. Deutschl. pl. 217.  
figs. 1, 2 ; Gould, B. Eur. pl. 303.

♂ *æst.* pileo fusco, medialiter angustè albido striato : dorso cinereo-fusco, plumis omnibus pallidiore marginatis : uropygio albo, indistinctè fusco striato : supracaudalibus albidis, fusco fasciatis : caudâ cinerascente, fusco transfasciatâ : remigibus nigro-fuscis, pogonio interno albido edentatis et griseo albo angustè terminatis, secundariis in pogonio externo fulvescenti-albido maculatis et marginatis : scapularibus dorso concoloribus : gulâ albâ, superciliis albidis : capitis lateribus et pectore longitudinaliter fusco maculatis : hypochondriis et axillaribus albis fusco transfasciatis, illis pallidè fusco lavatis : subcaudalibus albidis griseo fusco maculatis : rostro nigricante, ad basin brunnescenti-carneo : pedibus plumbeis : iride nigro-fuscâ.

♀ mari similis.

*Adult Male in summer* (Pagham, Sussex, May). Crown and nape dark brown, a central line and one over each eye passing to the nape dirty white ; neck dull white, streaked with dark brown ; back and scapulars dark brown, each feather having an indistinct greyish brown margin ; rump white : upper tail-coverts white, spotted and barred with dusky ; tail-feathers brownish grey, the central ones darkest,

all being barred with dusky brown, and narrowly tipped with white; primaries blackish brown, the shafts of these feathers white; the inner primaries notched on both webs, and narrowly terminated with white; secondaries like the inner primaries, excepting the elongated inner secondaries, which have the spots absent, or else very faintly indicated; upper wing-coverts dusky brown, marginally spotted with dull white; throat white, slightly spotted with brown; lores dusky brown; sides of the head, the neck, and breast greyish white, streaked with dusky brown; abdomen and under tail-coverts white; flanks marked with thick dusky transverse streaks; lower wing-coverts and axillaries white, barred with dusky brown; bill black, base of the under mandible pale brown; iris brown; feet light greyish blue; claws black. Total length 17 inches, culmen 3·0, wing 9·3, tail 4·0, tarsus 2·3.

*Female.* Similar to the male, but larger in size; one shot at Pagham at the same time as the male above described measures in length 18·5 inches, culmen 3·6, wing 10·5, tail 4·3, tarsus 2·4.

*Obs.* So far as we have been able to judge from the investigations we have made, we are inclined to consider that the Whimbrel is the same throughout the entire region from which we have recorded it, and that there is no closely allied, though distinct, species that can fairly be described as such. We have examined a specimen from the Philippine Islands which convinces us that the *Numenius luzoniensis* found there does not differ from our European bird. We may, however, add that of the two East-African specimens we have examined the axillaries are white in one example, and nearly so in the other, there being merely a few dark markings on those on the one side; otherwise we fail to detect the *slightest* difference from ordinary European specimens: and it is possible that in the winter plumage the axillaries are white or nearly so.

THE Whimbrel is perhaps one of the most widely distributed of the Waders, being met with not only over the entire Palæarctic Region, but also throughout the Indo-Malayan division, and in Africa as far down as the Cape. In Great Britain it is found during the summer season only in the far north; but in the autumn it occurs on all parts of the coast on its way southward, as well as in spring when travelling towards its breeding-haunts. Mr. Robert Gray writes that it "is known to breed in various parts of Scotland, perhaps more numerous in Orkney and Shetland than elsewhere. In the outer islands, it is found in considerable numbers throughout the month of May in Benbecula and North Uist, from both of which localities I have obtained specimens now in my collection. In these islands it is known, as in other parts of Britain, by the name of May bird, the bulk of the migratory flocks moving onwards during that month to higher latitudes. Some of my Hebridean correspondents tell me that the Whimbrel comes regularly about the first of the month. At first only a few are seen; but as the season progresses the flocks become very large." Mr. J. A. Harvie Brown also, writing to us respecting this species in Scotland, informs us that, "though breeding here and there along the N. and N.E. coasts of Scotland, it is a much rarer species in the breeding-season than it generally gets credit for amongst ornithologists. In Sutherland it breeds very sparingly along the north coast, on the moors adjoining the sea; and on the Island of Handa, on the west coast, I have repeatedly searched for it in vain, though led to suppose it was present there by accounts in some works on British ornithology. In Caithness it is more common than in Sutherland, and in Orkney increases in numbers as the Curlew diminishes. In the Hebrides great numbers are found in May, where, as Mr. R. Gray informs us, it goes by the name of 'May Fowl' amongst the natives. None remain there to breed, but pass northward to their stations in Orkney, Shetland, and Færoe.

In autumn it occurs, not uncommonly, along the east coast in small family parties of half a dozen birds about the middle of August, rarely coming far inland, though I have on occasions shot them in grass-fields seven or eight miles from the sea. They feed in company with Curlews, but always keep slightly apart from these birds; are not nearly so shy as the Curlews, and often continue feeding long after the Curlews have taken alarm and flown away. They do not remain long on the Stirlingshire coast, nor in the counties bordering the Firth of Forth, but continue their southward migration after resting for two or three weeks at most."

In Ireland it occurs only during the seasons of migration, not having, so far as we can ascertain, been known to breed there. Thompson writes that "in the month of April or May it appears in large flocks along the line of the eastern coast—on that of Wexford, Dublin, Louth, Down, Antrim, &c. As the Whimbrel is not found to the westward of Ireland within the latitude of this island, it is interesting to know that these migratory bodies move as regularly along the western as the eastern coast. Thus they are 'very common in April and May near Tralee, in Kerry,' appear in large flocks about Roundstone, on the Galway coast, in May, and remain during that month, where they are unknown at other times. The same is reported of them on the coast of Donegal. They likewise take an inland course of flight, appearing, among other places, at the marshes below Killaloe, on the Shannon, every spring, and in the high moory ground about Lough Conn, in Mayo. Their popular name everywhere has the word May connected with it—as May-bird, May-fowl, &c.—in consequence of their appearance in that month. A popular error exists in some places, that they are the young of the Curlew. This has arisen, not merely from the general resemblance of the species, and the Whimbrel being always much the smaller of the two, but from its being also so much easier of access than the other, believed to be its parent. On the arrival of the flocks in spring they are often very tame, and may be openly approached within gun-shot; but persecution soon renders them wild.

"Notes kept of the arrival of the Whimbrel in Belfast Bay, for many years, announce its earliest appearance on the 10th of April (in 1843), and the next earliest on the 22nd of that month (in 1838 and 1845). It remains generally from about four to six weeks. Some were seen so late as the 18th of June in 1843 (the year of their earliest arrival), and in the following year until the 14th of that month.

"They reappear very soon after the breeding-season, having been observed every year. The numbers gradually increase from the time of their being first seen. During August they are most numerous in the bay, whence they are chiefly gone by the end of September. They return in autumn along the line of the eastern coast towards their winter haunts in much smaller quantity than they went forth in spring, not more than about one being seen in some years at the former for ten at the latter season; an ordinary flock will consist of thirty in the spring, and of three in the autumn. The relative number on the entire coast will not, perhaps, be much above this proportion. In Cork Harbour Whimbrels are said to appear in considerable flocks in spring, but a few only to be seen in autumn. My correspondents do not mention this bird as visiting the western coast at the latter season; but its numbers are now so small where they do appear that they might pass unobserved, though in spring the large flocks are conspicuous on the shores.

"Not only is the Whimbrel, as already remarked, the only bird among our Scolopacidæ of

regular double passage, but it differs from all the other species of the family in the much fewer numbers appearing during the autumnal than the vernal migration. Its course of flight, too, both in spring and autumn differs from that of its congeners." We may, however, here remark that Mr. Harting informs us that "the reverse of this is the case in the south of England, where the flocks are always much larger in autumn than in spring, and composed of young birds; this tends to prove that the birds which pass northward in the spring to breed return southward in the autumn by a different route."

It has occurred in various parts of Greenland; and Professor Reinhardt writes that six examples were sent to his late father in the years 1831-35, and that he himself has seen five or six which were sent from various parts of that country. There is no instance of its having bred there, though the learned Professor appears to think that it may do so. In Iceland it is, according to Professor Newton, "very common, and one of the most characteristic birds of Iceland. Arrives at the end of April, breeds on the moors, and departs by the middle of September. The late Prince C. L. Bonaparte considered that the specimens of a *Numenius* obtained on his cousin's expedition to Iceland and Greenland, were distinct from the common *N. phæopus* (Comptes Rendus, 2 Août, 1856, xliii. p. 1021). I agree with Professor Reinhart (Ibis, 1861, p. 10) in doubting this." In the Færoes it breeds numerous. Captain Feilden, in writing on the ornithology of those islands, says that Svabo mentions that they arrive about the middle of April, and depart by the 29th of September. Herr Müller has seen some as late as the 3rd of October. In Norway its breeding-haunts are, Mr. Collett writes, "north of the fell-range; and it is especially numerous near Trondhjems fjord, as also within the Polar circle, on Lofoten, and in Vesteraalen, and is found here and there in East Finmark, up to the Russian frontier. South of the Dovre it occurs in the Jotun fells (*Barth*), in Valdres (*Printz*), and is tolerably well distributed on the sides of the fells in the Christiansand district, as at Aaseral. It only visits the western and southern coasts during migration. A flock of young birds which remained over winter was seen on Romerike in the winter of 1839-40, and several were shot." Nilsson gives its range in Sweden as "common in the northern parts during the summer, ranging then up to the Polar circle, and on the fells as high as the pine-growth extends; in the autumn and spring it is found throughout the central and southern provinces on the coasts." It has not been met with on Spitzbergen, though it occurs up to the extreme northern portions of Scandinavia. In Finland, Professor Malmgren informs us, it is commoner than the Curlew, and breeds numerous from 64° N. lat. northwards, and is common at Kajana in 64½° N. lat. Dresser also met with it near Uleåborg and Torneå. With regard to its range in Russia, we are informed by Mr. Meves that he observed it on Lake Onega in June, and on the forest-morasses at Sommarudden, near Archangel. Mr. Sabanäeff also writes that "in Central Russia this is the commonest Curlew; and, strange to say, it is in the north less rare than *N. arquatus*. In the Ural it is met with as far north as Parda (60° N. lat.), and is very common on the Bashkir plains. It breeds on the high plains in the Ural, at Kashu, Mazepetroffsk, and on the white steppes." Though occurring on the shores of the Baltic provinces, it is, Mr. Taczanowski writes, "rare in Poland, and only occasional; during the time I have carried a gun here I have seen it three or four times, but I never shot one. It does not breed in the marshes in the northern parts of the Government of Volhynia. Tyzenhaus thinks that it breeds in Lithuania. Professor Kessler says this bird is

just as common as *N. arquatus* in the districts of Kieff, and breeds there, although the latter is only met with during migration. It seems that this species only breeds in the steppes of Eastern Europe, although the Curlew also breeds in the marshes which are covered with tree-growth. All the specimens from Eastern and Western Siberia which I have seen differ somewhat from the European bird."

It passes regularly through Northern Germany, but is commoner on the shores of the Baltic than on those of the North Sea. In Denmark, we are informed by Mr. Benzon, it occurs during the two seasons of migration, but has not been known to breed there. It is not so numerous as the Curlew. In Holland, Belgium, and France it occurs during migration; but in Southern France it is, according to Jaubert and Barthélemy-Lapommeraye, never numerous. Professor Barboza du Bocage records it as "common" in Portugal; and Dr. E. Rey writes that he observed several large flocks near Barreiro in that country in the middle of March. Mr. Howard Saunders met with it commonly in Spain in the winter season; but Major Irby writes that in Spain and Tangiers it is met with in spring and autumn, not in the winter; Lord Lilford found it in the savannas of the Coto de Doñana in May; and, passing eastward, we find it recorded as occurring during migration in Savoy and various parts of Italy, though nowhere so common as the Curlew. Mr. C. A. Wright includes it in his list of the birds of Malta and Gozo, but without comment as to whether it is common or rare. We may here pause a moment to correct an inadvertent error in our article on *Numenius tenuirostris*, which our friend Mr. Wright has especially desired us to point out. Quoting Dr. Bree's well-known work we referred to its breeding there and nesting "in meadows and heaths," respecting which Mr. Wright says, "We have no meadows and heaths in this rocky island; and, as for its breeding, there is not a spot in the whole of Malta and its dependencies that a sane Curlew would ever dream of selecting for its nest."

Returning again to the present species, we find it occurring all along the coasts of the Mediterranean, though nowhere common. Lord Lilford met with it "sparingly in April and in September in Corfu and Epirus;" and Lindermayer states that it is found during the winter in all the Greek provinces, and that it breeds in the north of Greece; but this latter statement we are inclined to doubt, and think that if any species breeds there it will not be the present bird, but *N. tenuirostris*. Mr. G. Cavendish Taylor records it as occurring near Constantinople; and it is, according to Von Nordmann, "common near Odessa," where he observed it as late as May. Ménétries met with it in the Caucasus, on the banks of rivers; and doubtless it also occurs on the shores of Asia Minor. Brehm, Rüppell, and Heuglin all record it from Egypt, and Captain Shelley writes that it is met with in the winter in small flocks on the banks of the Nile. Loche writes that it is only met with in Algeria during passage, when it "appears in small families from the end of August to about the 15th of September, and again about the end of the winter;" and Mr. Taczanowski confirms this statement. Mr. E. Vernon Harcourt met with it on Madeira. Dr. E. Bolle found it on Canaria, where, he says, "it appears not uncommonly on the coasts of Fuertaventura, generally, however, in the autumn and winter, and is there called *Serapico cachimbero*;" and Mr. F. DuCane Godman records it from the eastern, central, and western groups of the Azores, and states that it is occasionally found about the coasts, where he saw it, but much doubts its breeding there regularly.

With regard to the extra-limital range of the Whimbrel, we find it throughout the whole of Siberia, India, China, Australia, and Africa. Steller records it from Kamschatka; and Dr. Gustav Radde met with it in the western portion of East Siberia, and procured a specimen on the central Irkut, where it was rare. He states that he compared it with specimens from Southern Europe, and found it to agree precisely. Mr. Taczanowski also informs us that he has obtained it from the neighbourhood of Czyta, Nestschinsk, and Darasun, in Dauria, as well as from Kiachta and Kuschtuk. Dr. Jerdon records it as found throughout India, where it is more abundant than the Curlew; Major Irby met with it at a half-dried jheel near Hurdni, in Oudh, in February 1859; and Dr. Leith Adams found it common at the mouth of the Indus, near Kurrachee, on the sea-coast. Mr. R. Swinhoe states that in China it is found "from Pekin to Shanghai in winter;" and under the name of *Numenius uropygialis*, Gould, he records it from Taiwanfoo, on Formosa. Messrs. Finsch and Hartlaub write that in the Leiden Museum there are specimens from Japan, Java, Sumatra, Borneo, Banka, Celebes, Halmahera, Morotai, Ternate, Batjan, Ceram, Amboina, Guebi, Waigiou, Timor, Flores, and Bourou; Wallace obtained it on the Aru islands, Müller in New Guinea, the Novara Expedition on the Caroline Islands; and Messrs. Finsch and Hartlaub have themselves examined specimens from the Pelew islands. We have, thanks to the liberality of Lord Walden, been able to examine a specimen of the Whimbrel from the Philippines, in order to judge of the specific value of *N. luzoniensis*; and we find that it does not in any way differ from a specimen sent to us by Mr. Collett from Nordland, in Norway. Messrs. Finsch and Hartlaub consider *Numenius uropygialis* of Gould to be identical with our Whimbrel, which we think also most probable; and this will increase the range of the present species to Australia and Tasmania. In Africa the Whimbrel is, as above stated, found on the Nile; Peters records it from Mozambique, Dr. Hartlaub from Zanzibar, Mr. E. Newton from Madagascar, Mauritius, and Rodriguez, and Mr. E. L. Layard from South Africa, where, however, he states "it is a rare bird, only three having reached my hands: one of these was procured in the neighbourhood of Walwich Bay by the Messrs. Chapman; the other two were shot near Cape Town, one by my son, the other by Mr. Butler, the Taxidermist of the Museum. From the statements of the two latter it appears the birds were feeding in company with the Common Curlew; and, may be, others of the same species were with them, as they were killed by chance, and the difference not observed till submitted to me for inspection." Mr. Andersson speaks of it as rare in Damara Land, and states that, as far as his observation goes, it is there, and in Great Namaqua Land, less numerous than the Curlew, and, in fact, but rarely met with. Dr. Hartlaub writes that it is found in Gambia, and on the island of St. Thomé; Messrs. Shelley and Buckley met with it on the Gold Coast; DuChaillu obtained it on the Camma river; Governor Ussher shot it on the Nagua river; and Pel sent it from Ashantee.

In America it does not occur, being there replaced by *N. hudsonicus*, which is easily recognizable by its rufous axillaries.

In its habits the Whimbrel bears considerable affinity to the Curlew. With us they are generally met with in the spring and autumn along the coast. Mr. Stevenson writes that it visits the Norfolk coasts "on its passage to and from its breeding-grounds; and though a few may be seen occasionally in March and April, the appearance of the main body in May, on the Breydon and Blakeney muds, is so invariable that this species is always spoken of as the 'May bird' by

the gunners in both localities. Their numbers, as with all migratory shore-birds, vary much in different seasons; but at times they are very plentiful, as was particularly the case in the spring of 1863. Of these the chief portion pass on to the northward after a few days; but small parties may be seen on different parts of the coast up to the middle of June, and even as late as July. At Hunstanton, in 1863, I found one or two small flocks frequenting the mussel-scalps up to the second week in June; and Mr. Dowell has observed them at Blakeney in two or three different seasons, between the 25th and 30th of July, 'not paired off, but keeping together in "herds" of from eight to ten,' most probably birds which would neither breed here nor elsewhere during that summer. By the end of August or beginning of September, old and young together, have again commenced their southward journey; but the numbers then seen are but few in comparison with the spring flight. In Mr. Dowell's notes I find no record of this bird having been observed by him at Blakeney later than the first week in October; and Mr. F. Frere describes them as always scarce in autumn on Breydon, and rarely, if ever, seen during the winter months."

In the west of Scotland, according to Mr. R. Gray, "a few are seen; but as the season progresses the flocks become very large. They are then seen daily feeding on the pasture-lands near the sea, chiefly on the west side of Benbecula and North Uist. These pastures, as I have myself observed, are covered with a small land-shell (*Helix ericetorum*), which is so abundant that I have gathered hundreds in a few minutes; and this shell constitutes the chief food of the Whimbrel during its stay on the islands, extending over a period of three or four weeks, sometimes longer, as I have procured birds that were killed in June. The flocks, as a rule, depart after their temporary sojourn about the last of the month, and do not return, except as very rare stragglers, until the first of May following. Writing from Iona, Mr. Graham states that the Whimbrel only visits that island in May, arriving in very large flocks about the 1st, and remaining until the very last of the month, after which they entirely disappear, and are seen no more for the rest of the year, except as single stragglers. They are then very tame and unsuspicious. My friend thus describes its arrival:—"When the wintry storms have at last done roaring, and the sea has subsided into a peaceful calm, when the air is genial, and the sky is blue, then the unusual and peculiar cry of the Whimbrel announces the fact that summer is nigh. Its call consists of several rapidly repeated, short and clear whistles, uttered about seven times in rapid succession; whence its name of *Seven Whistler* has been derived. This cry is heard as the flocks are flying to and fro high in the air, before alighting on the grass-covered sandy levels which skirt a considerable portion of the shores of Iona and are at this time of the year enamelled with wild hyacinths, purple orchis, and other wild flowers. A flock of some fifty of these long-legged birds scattered over the bright green turf forms a very alluring sight; and their comparative heedlessness makes them an easy prey to one accustomed to circumvent the timid and cunning Curlew. They do not touch here on their autumnal migrations.' The total absence of these birds on many of the outer islands, at a time when one would expect to see them on their return, has been a frequent subject of remark. On the island of Islay, however, as I have been informed by Mr. Elwes, they are found in flocks about Loch Indall during the winter and spring, which shows that a few, at least, come south by the same route. I have seen one or two stray Whimbrels in the Clyde estuary early in August, along with small troops of Dunlins, back at that season from their breeding-haunts on the moors."

In the breeding-season the Whimbrel is found scattered all over the north of Europe and Asia. It breeds but rarely in England, though more commonly in the north of Scotland. Mr. A. G. More writes as follows:—"Mr. Thomas Gough, of Kendal, tells me that the nest of the Whimbrel has been recently found on the mountains of Yorkshire adjoining Westmoreland, and that he has perfect confidence in his informant. Mr. W. Dunbar describes the Whimbrel as plentiful during the breeding-season all along the coast of Sutherland and Caithness, and he tells me that it breeds in open moors near the sea. Mr. H. Osborne also marks the Whimbrel as breeding in Caithness. It breeds in Orkney and Shetland, but not in the Outer Hebrides."

Captain Feilden met with it breeding on the Færoes, where, he says, "they are so abundant as a breeding species that we never seemed to be able to get out of their sight; they were constantly flying round us in company with the Oyster-catchers. The first nest of the Whimbrel that we procured was on the 25th of May, in the island of Sunderø; afterwards we found them in considerable numbers. On the 17th of June I got twelve nests, each with four eggs, which had been collected for me the week previously from the vicinity of Nordedahl, Stromø; all were quite fresh. On the 16th of June I found a nest in rather a singular position; it was placed close to a rill, between two blocks of stone, which just gave room enough for the bird to squeeze between. The Whimbrel is of a pugnacious disposition whilst breeding, and is constantly on the alert to drive off intruders from the vicinity of its nest; I have watched them by the hour chasing the Lesser Black-backed Gull (*L. fuscus*). When engaged in these combats their flight is rapid and arrow-like, whilst they constantly repeat their trilling cry, which has not inaptly been described as resembling the words *tetty, tetty, tetty, tet*, quickly repeated. A beautiful white variety is in Herr Müller's collection." In Norway, as we are informed by our friend Mr. Robert Collett, "it is chiefly found during the breeding-season north of the Trondhjems fiord, where it is numerous in the coast-region of Nordland and Finmark, in the latter localities commoner than *Numenius arquatus*. In Southern Norway, where this latter species is so numerous, the Whimbrel is rare during the summer, and found only here and there, though breeding in the fells at an altitude of from 3000 to 4000 feet above the level of the sea, as on the Jotunfjeld and in Thelemarken; but it is only found there in scattered pairs. The nest is simply a depression in the soil on the top of some slight elevation in any comparatively dry spot in the marshes, and is usually lined with a few grass bents or leaves of *Rubus chamæmorus*. The old birds are very shy, and can rarely be approached within gunshot, though fond of their young." On the Tromsø island Mr. Collett found incubated eggs on the 17th of June.

In Dresser's collection is a series of the eggs of this bird, all collected on the Færoe islands, which in size vary from  $2\frac{1}{4}$  inches by  $1\frac{2}{4}$  to  $2\frac{2}{4}$  by  $1\frac{2}{4}$ , being pear-shaped: in colour they vary from light olive-brown to dark greenish brown; and most of them are clouded and blotched with dark umber-brown, the spots being more numerous towards the larger end. Dr. E. Rey writes us that he has measured twenty-seven eggs, which average 58.2 by 40.8, the largest measuring 62 by 43, and the smallest 54.5 by 39.5 millimetres respectively. In form he finds very little variation; but in colour and marking they vary greatly. Mr. Benzon, who informs us that he very much doubts if it ever breeds so far south as Denmark, has in his collection entirely unspotted eggs from the Færoes. The measurements of a series from the Færoes and Iceland he gives as from 54 by 41 to 65 by 43 millimetres respectively. He writes that he has had fresh

eggs sent to him in Copenhagen from the Færoes, which he found very good eating, the white being clear and sweet, dull white in colour, and the yelk dark orange-yellow, and firm.

The food of the Whimbrel consists of various sorts of insects and crustaceans. Mr. Collett informs us that he carefully examined the stomachs of some he shot in Nordland in the summer, and found them to contain insects (*Litorinæ*), both dismembered and entire, and numerous small crustaceans which are left by the receding tide and are picked up. In rainy weather, he says, he has often observed them on ploughed land and cornfields, probably searching for *Lumbrici*.

The birds figured and described are in Dresser's collection; full particulars as to locality, &c. are given above.

In the preparation of the above article we have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀. Pagham, Sussex, May (*R. B. S.*). *c*. Pagham, July 1870. *d*, ♂. Pagham, April 29th (*R. B. S.*).  
*e*. Nordland, Norway (*Collett*).

*E Mus. Lord Walden.*

*a*, ♀. Cup Island, Philippines, December 1871 (*Dr. A. B. Meyer*).

*E Mus. J. H. Gurney, jun.*

*a*. Balta sound, Shetland, May 1868 (*Saxby*). *b*. Great Cotes, Ulceby, May 17th, 1869 (*Cordeaux*). *c*. Natal, South Africa.

*E Mus. J. E. Harting.*

*a*, ♂, *b*, ♀, *c*, ♂, *d*, ♂, *e*, ♀. Sussex, May (*J. E. H.*). *f*, ♂, *g*, ♂. Sussex, September (*J. E. H.*). *h*, ♂. Kingsbury, Middlesex, May (*J. E. H.*). *i*. Morocco, autumn (*Olcese*). *k*. Gambia, autumn (*Whitely*). *l*. Walvisch Bay, September (*Andersson*). *m*. Zanzibar, Winter (*Dr. Kirk*). *n*. Madagascar (*Van Dam*). *o*, ♀. Gilolo. *p*, ♀. Batjan, December (*Bernstein*). *q*, ♂, ♀. Morty Island, September (*Bernstein*). *r*, ♂. Sangir, November (*Schlegel*). *s*, ♂. Menado, Celebes (*Wallace*). *t*, ♂, *u*, ♀. New Guinea (*Müller*). *x*, ♀. Misool, New Guinea, September (*Rosenberg*).

*E Mus. Howard Saunders.*

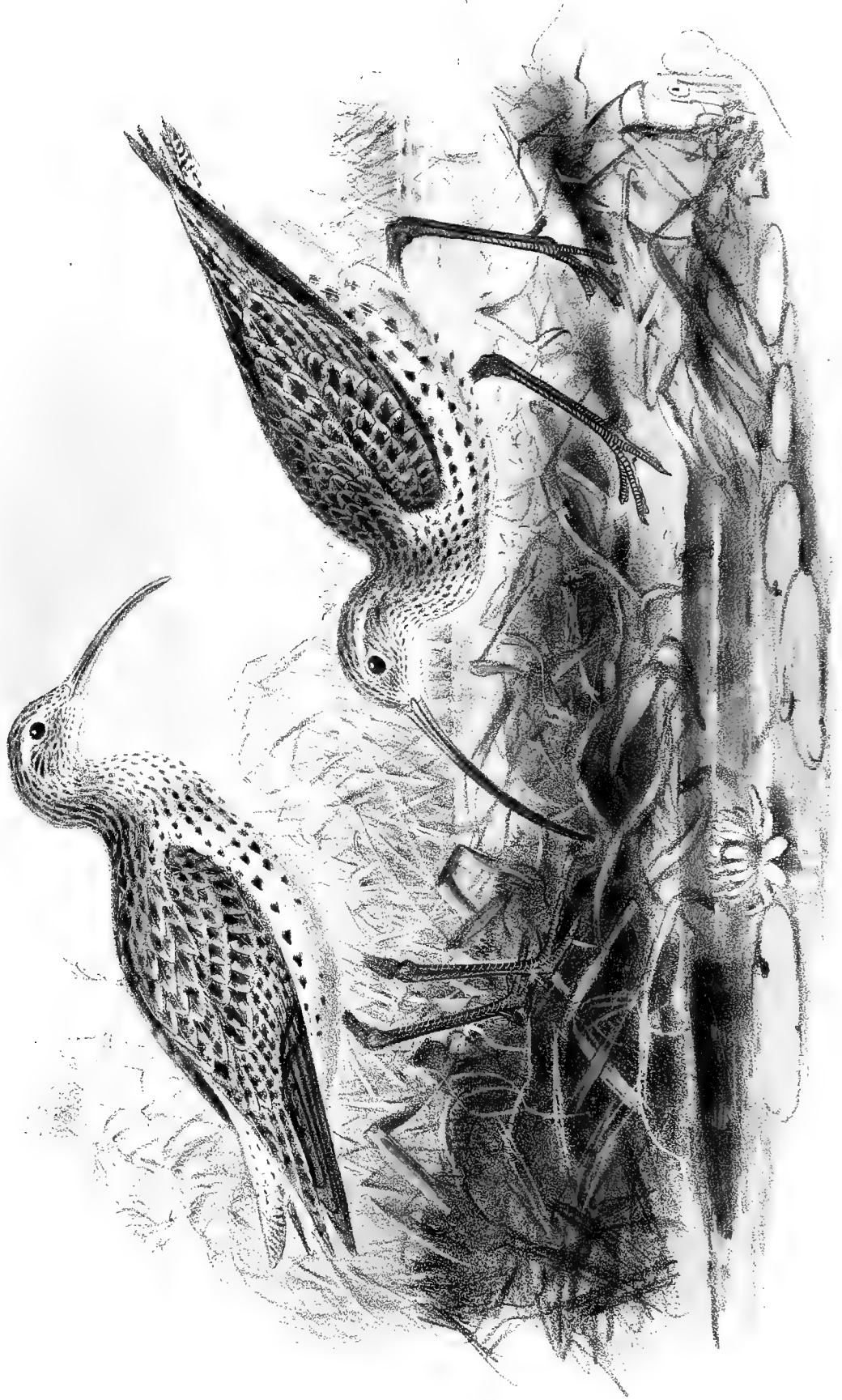
*a*, ♂. Malaga, Spain, July 29th.

*E Mus. T. E. Buckley.*

*a*, ♂. Lapland, July 28th. *b*, ♂. Skatstugan, Lapland, June 28th.







NUMENIUS TENUIROSTRIS  
XIX.

## NUMENIUS TENUIROSTRIS.

(SLENDER-BILLED CURLEW.)

*Numenius tenuirostris*, Vieill. Nouv. Dict. d'Hist. Nat. viii. p. 302 (1817).

*Numenius syngenicus*, Von der Mühle, Orn. Griechenl. p. 111 (1844).

*Courlis à bec grêle*, French; *der dünnschnäblige Brachvogel*, German; *de Gevlekte Wulp*, Dutch; *Chiurlottello*, Italian; *Maçarico*, Portuguese.

♂ pileo rufescenti-brunneo, plumis medialiter nigro striatis: loris cum supercilio et facie laterali albis brunneo longitudinaliter striatis, genis brunneo punctatis: collo postico albicante, brunneo striato: dorsi plumis fulvescenti-brunneis, parte mediana saturate brunnea: dorso postico et uropygio pure albis, hoc brunneo striato: tectricibus alarum pallide brunneis, albo variis: ala spuria brunnea, albo terminata: remigibus brunneis, scapis albidis, secundariis pogonio interno albo fasciatis, et externe albo maculatis: cauda alba, transversim irregulariter brunneo notata: gutture et abdomine pure albis: corpore subtus reliquo albo passim punctulis parvis brunneis longitudinaliter notato: hypochondriis maculis majoribus pyri-formibus distincte punctatis: subalaribus et subcaudalibus albis: rostro brunneo, versus basin isabellino: pedibus plumbeis: iride brunnea.

♀ mari similis sed conspicue major et rostro multo longiore.

*Male.* Above brown, the head as well as the back and scapulars tinged with buff, the centre of the feathers being darker brown, the edges lighter; back of the neck greyish white, longitudinally streaked with rufous brown; lower part of the back, rump, and upper tail-coverts pure white, the latter marked with lines of brown; wing-coverts pale brown, mottled with white; primary coverts dark brown, tipped with white; quills brown, the shafts whitish, the secondaries irregularly banded with white, the innermost secondaries very dark brown, waved indistinctly with paler brown, and edged with white; tail white, irregularly banded with brown; lores, a distinct eyebrow, cheeks, and ear-coverts white, striped with little lines and specks of brown; throat pure white; lower part of the throat and breast white, streaked with distinct brown markings down the centre of the feather, the sides of the breast being very distinctly spotted with large pear-shaped markings; lower part of the breast, abdomen, under wing- and tail-coverts, and axillary plumes pure white; bill brown, the lower mandible flesh-colour at the base; legs leaden grey; iris brown. Total length 14 inches, culm 2·75, wing 9·3, tail 3·8, tarsus 2·1.

*Female.* Similar to the male, but larger, and has the bill much longer and the spots on the breast very plain and thickly distributed. Total length 16·7 inches, culm 3·4, wing 9·7, tail 3·8, tarsus 2·35.

THE Slender-billed Curlew is of about the same size as the Common Whimbrel (*Numenius phaeopus*), but is at once to be distinguished by its pure-white axillary plumes, these being barred with brown in the last-named bird. The Whimbrel is very differently coloured also, and we cannot understand how there has occasionally arisen a difficulty in distinguishing between the two species; besides the brown colour of the head, the absence of the very distinct pear-shaped markings on the flanks will at once serve to separate the Whimbrel from its more beautiful congener.

The present species is by no means uncommon in the countries bordering the Mediterranean, but is of rarer occurrence in more northern latitudes. It has once been obtained in the island of Sylt, off the Danish coast; and this we believe to be its highest northern range yet known. A single instance has been recorded of its capture in Holland (it is mentioned by Professor Schlegel as having been killed near Spaarndam on the 5th of December, 1856); but it has twice been obtained in Belgium, and is supposed to have bred there once, near St. Froud, as stated by Baron de Selys-Longchamps. In France, according to MM. Degland and Gerbe, "it has been procured near Montpellier, Nîmes, and Marseilles in autumn, near Calais in February 1840. We have seen at the house of Dr. Lesauvage, in Caen, and in the museum of that town, specimens killed on the marshes of Calvados, and have several times seen it on the marshes of Paris, near the Bay of Somme, and in other parts of Picardy."

Baron J. W. von Müller states that it passes Provence singly in autumn; and in the south of France MM. Jaubert and Barthélemy de la Pommeraye observe that "it is found in spring in pairs or small flocks, and is brought to the Marseilles markets, where the other Curlews are rare. It breeds on the edges of the marshes."

The following note has been published by Bailly, with regard to its occurrence in Savoy:—

"Early in October 1846, a flock of from six to eight individuals of this species alighted on the gravelly banks of the Jère, near Chambéry. After resting a short time they began searching for food, running with great agility on the gravel after insects, which fled on their approach, and going into the water up to the knee in search of small shell-fish. One was shot; and the rest flew off, and were soon lost to view. An adult male, shot on the 8th of September, 1852, at Villascher, was brought to me by a sportsman, who found it in a maize-field."

Naumann says it is found in Dalmatia and on the Austrian coasts, perhaps less rarely than has hitherto been supposed.

In Italy the Slender-billed Curlew is not rare. Savi records it from Piedmont, Venice, and the neighbourhood of Pisa, where also Mr. Giglioli has observed it. The latter gentleman says:—"I had the pleasure of seeing several on an island at the Bocca d' Arno. Their presence in Tuscany appears to be accidental; for at times they come in great numbers, becoming afterwards extremely scarce." Prince Bonaparte, who has given a figure of the present species, which cannot be very highly recommended for accuracy, in the 'Fauna Italica,' considers it not uncommon in the marshes near the Tiber; and Malherbe records it as the "most common Curlew in Sicily. Near Messina and Palermo it is often seen in the spring, and during winter is common in several parts of Sicily, particularly near Catania and Syracuse."

Dr. Carl Bolle found it in Spain occasional and rare. He observed it on the island of Cortegada, near the Rio de Arosa, in August and September. Major Irby considers it an autumnal migrant in Andalusia, where it is common in winter; and Mr. Howard Saunders writes to us as follows:—

"I observed *Numenius tenuirostris* in Andalusia on several occasions in spring. I have no positive knowledge of its breeding-haunts, but on the 25th of May I observed a pair frequenting a small brackish lake in the hills of Arragon, and probably breeding, though I was unable to discover their eggs."

The Rev. Canon Tristram has kindly forwarded us the following note:—

“*Numenius tenuirostris* I shot twice in the Tunisian region. It is there very abundant in winter, in large flocks, and as wild as a Curlew. What becomes of it in summer I cannot say. I never was out a day, even as late as June, without putting up flocks, but always out of shot. I believe they were all of this species, as I did not get the Whimbrel. In Greece and Palestine I continually saw large flocks of a small Curlew, but cannot say of which species.”

“In the Regency of Tunis,” writes Mr. Salvin, “on more than one occasion, I saw a flock of these Curlews, and on an undulating plain near El Djan succeeded in shooting one.”

The following notes are taken from Captain Loche’s work:—

“We found the Slender-billed Curlew on the shores in Algiers, early in September, in pairs or small families, very shy. Their food consisted of insects, worms, and small mollusks. Their cry, which they utter either when on the wing or when sitting, is soft and monotonous. We also found it in the south of Algeria, near the lakes, the sebkhra, and chotts, especially near Saïda, at the end of February, and suppose that it breeds in this country. It breeds in Egypt, in the marshes amongst the grass, laying four or five eggs, white or yellowish white, with irregular spots and blotches of a brown or ash colour, more numerous towards the larger end, measuring about 55 millims. by 40 millims.”

The following observations are from the pen of Mr. C. A. Wright, of Malta. Writing about the occurrence of the Whimbrel and Slender-billed Curlew, he observes:—

“These two birds are often confounded together, and are indiscriminately called by the Maltese sportsmen *Gurlin sekond* and *Gurlin terz*. They arrive at the same seasons as the Common Curlew. I have shot five or six specimens of *N. tenuirostris* at different times, and examined many others obtained in the market. It is certainly the commonest of the three. I cannot agree with Dr. Bree’s opinion that there can be any question regarding the specific difference between *N. phaeopus* and *N. tenuirostris*. As far as my observations extend, the difference between the two species is distinct and constant; and the points in which they differ are clearly laid down by Degland, and entirely correspond with my own experience. The variations observable in the size and length of the bill should not present any difficulty, as the same occur in the common species, *N. arquatus*, and doubtless arise from difference of age and sex. I gain confidence in this opinion on reading a letter from Sir William Jardine to Dr. Leith Adams, which has been kindly placed at my disposal. The remarks contained in this letter are so much to the purpose that I shall make no apology for giving them here. Referring to some specimens of the Slender-billed Curlew sent to him from Malta by Dr. Adams and myself, Sir William Jardine says:—

“‘You may rest perfectly satisfied about *N. tenuirostris*. I have not seen Dr. Bree’s remarks, but there is no doubt about the distinction. I have compared Whimbrels from a great many localities, and they agree very well together; and I have type specimens of *N. tenuirostris* from the Prince of Canino, which are identical with the birds I examined and now have from you. The nearest state of the Whimbrel to *N. tenuirostris* is the male in breeding-plumage. This I have, killed in May; but it is easily distinguished by strength of bill, head-markings, and tail. Of course, in both the kinds you have, the bills differ in length, thickness, and strength, as in the Curlew.’”

The accompanying observations were also contributed by Mr. Wright to Dr. Bree's 'Birds of Europe':—

"It arrives here on migration in the spring and autumn; in both seasons I have shot it on Fort-Manuel Island, whose low and muddy shores form one of the most attractive resorts for Waders of all kinds during their passage. It also passes with others of the Scolopacidæ in July. I have noticed considerable variation in the size and length of bill (doubtless arising from age). All those I have shot were single birds; but they are also sometimes observed to pass in flocks. They nest in meadows and heaths. They make a slight excavation, which they line with pieces of grass and a little moss. They lay from three to four eggs."

Herr A. von Homeyer (J. f. O. 1862, p. 427), who observed the present species in the Balearic Isles, thus writes:—"This species breeds on the Prat, as I saw single individuals during my stay throughout the summer. I did not find the nest, nor did I bring a skin back, but I saw several stuffed specimens in private collections. It differs from *Numenius arquata* in frequenting, like Ruffs and Godwits, very wet places, even wading up to the belly in water. M. Julius Lichtenstein, of Charlos, informed me that this bird breeds near the coast, between Valencia and Barcelona, in suitable places not uncommonly, as also at Charlos itself. According to Rios it is occasional and rare in Galicia."

In Greece Lindermayer and Von der Mühle have both met with it. The former author writes:—"I do not know when this Curlew arrives with us, as I have only killed it in March. It is, however, certain that it breeds in our northern provinces."

Von der Mühle likewise observes:—"This bird is commoner in Greece than the Whimbrel, and appears to breed here, as I have shot stragglers in the summer, apparently seeking food, and in August procured young birds on the coast. It leaves us at the end of September."

Lord Lilford states:—

"Two specimens only of this bird came under my observation at Corfu; both were killed on the race-course, in September 1857. I obtained a good specimen at Nice in the winter of 1858."

The present species is likewise found in Egypt; but its exact limits in N.-E. Africa have not yet been satisfactorily assigned. Dr. von Heuglin, writing in 1856, gives its range as follows:—"In autumn and spring on passage it is found along the Nile. It appears in Chartum as soon as the end of August and the early part of September, and in April, on migration. In the latter month large flocks were observed in the desert near Alexandria." In 'The Ibis' for 1859 he also recorded it from the Red Sea, but afterwards referred the bird thus observed to *N. arcuatus*, and we must await his new work to see whether he still gives the same habitat for the present species that he did in 1856.

The eastward range of the Slender-billed Curlew is also not clearly defined. Von Nordmann states that it is not rare in New Russia, while Eversmann says that it is found nesting on the steppes of Orenburg. It is doubtful if it ranges further east than is here mentioned. Mr. Cassin, in his paper on the birds procured by Capt. Henderson at Hakodadi, speaks of a species of Curlew to which no name is given. Mr. Swinhoe, in his list of the 'Birds of China,' refers to this bird as the fourth in his list of Curlews, and says it is allied to *N. tenuirostris*, this latter fact not being alluded to by Cassin. Mr. Blyth, commenting on the above statement, thus writes:—

"Mr. Swinhoe (P. Z. S. 1863, pp. 317, 318) gives as many as nine species of Curlew (one or

two perhaps insufficiently distinguished) from China, Formosa, and Japan; and his no. 314 is perhaps the supposed *N. tenuirostris*, 'stated to have been met with in Burmah,' according to Dr. Jerdon. I have considerable doubt, however, of the latter having been other than a small-sized individual of *N. lineatus*, a species which varies remarkably in size, quite as much so as *Limosa ægocephala*; and I believe that the *N. arcuatulus*, Hodgson (Gray's Misc. p. 86; B. M. Cat. Hodgson's Coll. 2nd ed. p. 137), is founded on a small-sized *N. lineatus*. I long habitually sought for the supposed *N. tenuirostris* among the considerable numbers of *N. lineatus* brought to the Calcutta bazar."

The *Numenius syngenicus* of Von der Mühle is considered by some naturalists to be a good species. We, however, follow Professor Schlegel in believing it to be only a variety of the present bird. The same author refers *N. hastatus* of Contarini to *N. tenuirostris*; but as we have not had an opportunity of examining the work in which this name was published, we have refrained from adding it to the list of synonyms.

Figures of the present species have been given in Savi's 'Ornitologia Toscana,' Bonaparte's 'Fauna Italica,' Roux's 'Ornithologie Provençale,' Gould's 'Birds of Europe,' Bree's 'Birds of Europe,' Naumann's 'Vögel Deutschlands.'

In the preparation of the above article we have examined the following specimens:—

*E Mus. Sharpe and Dresser.*

*a, b.* Malta (*C. A. Wright*). *c.* South Europe.

*E Mus. Lord Lilford.*

*a.* Nice, January 1859 (*L.*). *b.* Ethizeh, January 28, 1863 (*S. Stafford Allen*).

*E Mus. Salvin and Godman.*

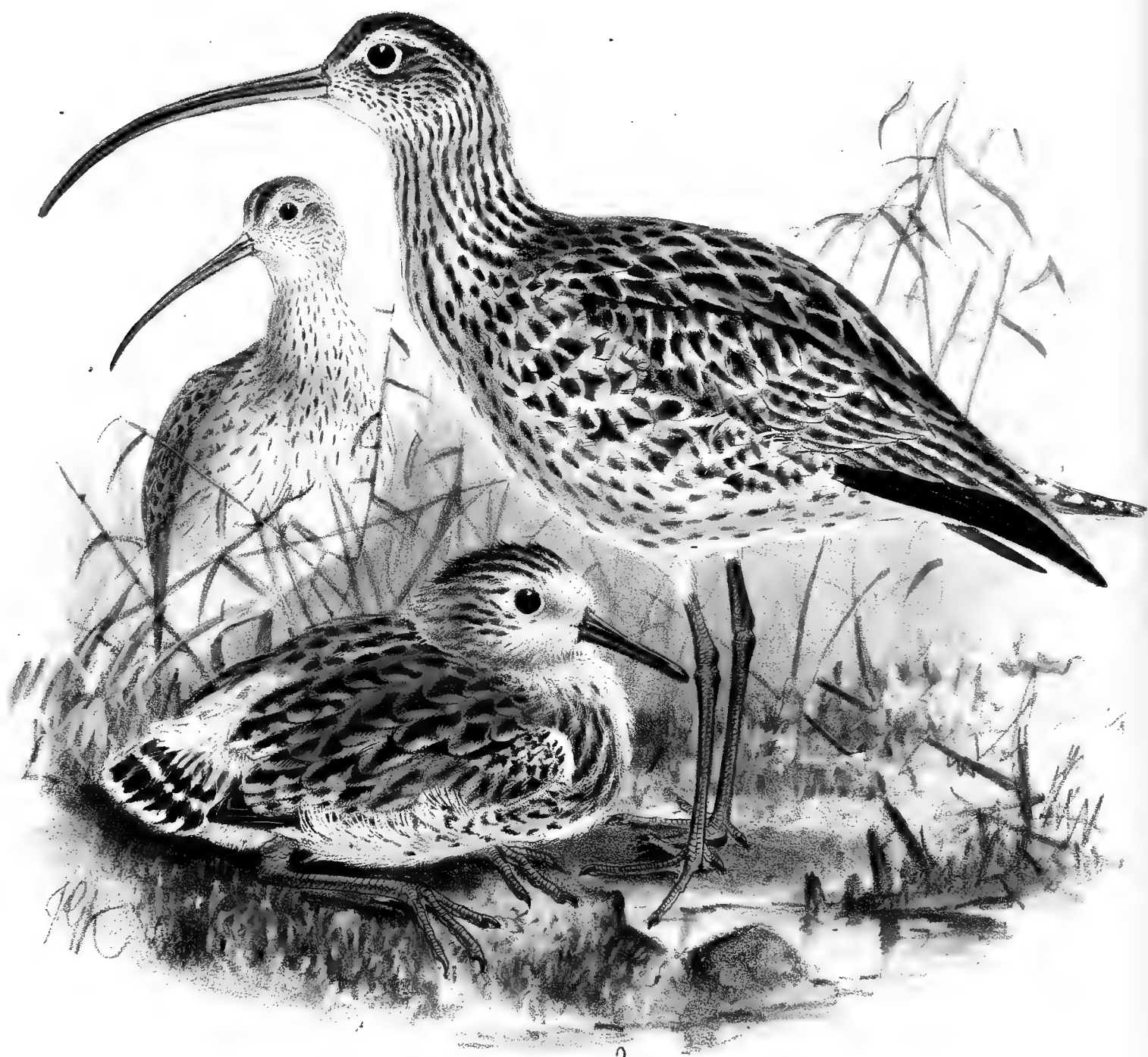
*a.* Asia Minor, December 19, 1867 (*T. Robson*). *b.* El Djem, Tunis, February 28, 1857 (*O. Salvin*).

*E Mus. H. B. Tristram.*

*a. ♂.* Constantine, February 3, 1857 (*H. B. T.*).







$\frac{2}{3}$

COMMON CURLEW.  
NUMENIUS ARQUATA.

## NUMENIUS ARQUATUS.

(COMMON CURLEW.)

- Scolopax arquata*, Linn. Syst. Nat. i. p. 242 (1766).  
*Scolopax madagascariensis*, Linn. tom. cit. (1766, ex Briss.).  
*Numenius arquata*, Lath. Ind. Orn. ii. p. 710 (1790).  
*Numenius major*, Steph. Shaw's Gen. Zool. xii. pt. 1, p. 26 (1824).  
*Numenius virgatus*, Cuv. Règ. An. i. p. 521 (1829).  
*Numenius lineatus*, Cuv. ut suprâ (1829).  
*Numenius medius*, Brehm, Vög. Deutschl. p. 609 (1831).  
*Numenius nasicus*, Temm. Man. d'Orn. iv. p. 393 (1840).  
*Numenius arquatula*, Hodgs. Gray's Zool. Misc. p. 86 (1844).  
*Numenius assimilis*, Brehm, Naum. 1855, p. 291.  
*Numenius rufescens*, Brehm, ut suprâ (1855).  
*Numenius longirostris*, Brehm, ut suprâ (1855).

*Curlew*, *Whaup*, *Whaap*, *Stock Whaap*, *Whitterick*, English; *Guillneach*, Gaelic; *le Courlis*, French; *Zarapito real*, Spanish; *Maçarico real*, Portuguese; *Chiurlo maggiore*, Italian; *Gurlin*, Maltese; *grosser Brachvogel*, German; *Stor Regnspove*, *Dobbelspove*, *Dobbelt-Regnspove*, *Helspove*, *Dobbelt-Österfugl*, *Österlands-Vibe*, *Pipösten*, *Regnpiber*, *Per-Hahn*, Danish; *Tangspegvi*, Færoese; *Storspove*, Norwegian; *Storspof*, *Vindspof*, *Kovipa*, Swedish; *Kulik kotrous*, Russian; *Kulig ugorowy*, Polish.

*Figuræ notabiles.*

Buff. Pl. Enl. viii. pl. 842; Naum. Vög. Deutschl. viii. taf. 216; Gould, B. Eur. iv. pl. 302; Yarr. Brit. B. ii. p. 510; Schl. Vog. Nederl. pl. 247; Kjærb. Orn. Dan. afb. xxxiii<sup>a</sup>. fig. 4; Gould, B. Gt. Br. part xv.

*Ad. suprâ brunneus*, plumis extûs fulvescente limbatis, scapularibus utrinque fulvo maculatis: pileo brunneo: cervice fulvescenti-albâ, brunneo striolatâ: maculâ superciliari et alterâ infraoculari albis: facie laterali albâ, brunneo minutè striolatâ: tectricibus alarum brunneis, albido limbatis: remigibus brunneis, scapis albis vel pallidè brunneis, secundariis extûs albo maculatis, intûs fasciatis, intimis dorso concoloribus et eodem modo limbatis: dorso postico et uropygio albis, hâc nigro maculato et celatè transfasciato: supracaudalibus et caudâ albis, nigricanti-brunneo transfasciatis, hâc plus minusve cinerascanti-brunneo lavatâ: gulâ albâ: corpore reliquo subtûs albido, pectore brunneo striato, hypochondriis eodem colore irregulariter fasciatis, abdomine imo et subcaudalibus albis angustissimè brunneo striatis: subalaribus et axillaribus purè albis brunneo vix notatis: rostro saturatè brunneo, ad basin carneo: pedibus griseo-plumbescentibus: iride brunneâ.

*Adult Male* (Skära, Sweden, May 24th). Head and neck blackish brown, the feathers being more or less broadly margined with dirty white and dull fulvous, giving a striated appearance; back, scapulars, and wing-coverts blackish brown, broadly edged and notched with pale fulvous and dirty white, some of the

feathers here and there washed with dull rufous on the edges; lower part of the back and rump milky white, marked here and there with elongated, blackish, drop-shaped spots; upper tail-coverts white, more or less barred with dark brown, and sparingly marked with rufous; tail white, broadly barred with blackish brown, and on the central feathers washed with ashy grey; quills blackish brown, the shafts of the outer primaries being white, and of the inner ones pale brown; secondaries notched with white on both webs, the markings on the inner web almost forming bars; inner secondaries like the scapulars; chin and upper part of the throat white, as is also the region round the eye; neck and breast white, striated with dark brown, these markings, which are along the centres of the feathers, becoming almost drop-shaped on the lower part of the breast; flanks with these markings very large; abdomen and under tail-coverts white, with small, scattered, blackish brown stripes; under wing-coverts white, marked with dark brown; bill dark horn-brown, dull fleshy brown at the base; legs plumbeous grey; iris brown. Total length 22 inches, culmen 5·0, wing 11·6, tail 4·9, tarsus 3·0.

*Female.* Similar in plumage to the male.

*Younger Male, in autumn.* Has the underparts, especially the lower portion of the abdomen, less marked with brown, and the lineations on the throat and breast much narrower than in the preceding bird; the neck, upper part of the breast, and back are also washed with pale rufous.

*The Nestling,* as will be seen from the Plate, bears considerable resemblance in plumage to the adult bird.

*Obs.* Mr. Harting has permitted me to make use of a most careful table he has drawn up of the measurements of twenty-five specimens of the Common Curlew, obtained in various parts of the world, from which it appears that in examples from Great Britain the measurements vary as follows:—bill 4·3 to 6·1 inches, wing 11·6 to 12·4, bare part of tibia 0·9 to 1·5, tarsus 3·0 to 3·5, and middle toe 1·8 to 2·0. In others from Asia and Africa they vary as follows:—bill 4·4 to 7·0 inches, wing 11·0 to 12·2, bare part of tibia 1·0 to 1·5, tarsus 2·11 to 3·5, and middle toe 1·8 to 2·0. One unusually small specimen from Sussex measures:—bill 3·9 inches, wing 11·1, bare part of tibia 1·1, tarsus 3·0, and middle toe 1·8. In plumage these specimens vary quite as much as in measurements, the axillaries ranging from pure white to white barred with brown, and the rump from nearly pure white to white sparsely streaked and spotted with brown; the underparts are in some narrowly lineated, in others almost pure white, and again in others marked with large tear-shaped drops,—all these stages being found in specimens shot in Great Britain as well as in those from other localities. From the differences in these twenty-five specimens I am the more fortified in my opinion that many species described as distinct must be united under the name of *N. arquatus*.

The present species being the type of *Numenius*, I may give the following short sketch of this family; and in so doing I take the opportunity of thanking Mr. J. E. Harting for the liberal manner in which he has placed at my disposal the splendid series of Curlews in his collection, as well as the manuscript notes he has collected with a view to publishing a detailed review of the Waders. The numbers are, as usual, those in Gray's Hand-list.

10239. *Numenius arquatus*. I treat fully of the geographical range of this species further on, so will add nothing here.

10240. *N. major*, Schlegel, is, I consider, the same as *N. arquatus*, this species being made on size, which varies so greatly in this group. Mr. L. Taczanowski, in a most elaborate paper on the Curlews of Eastern Siberia (Cab. Journ. 1871, pp. 56–61), gives a careful description of this form under the name of *N. nasicus*, Temm., and states that, besides the difference in size, it has the markings on the underparts narrower than in typical examples of *N. arquatus*, and that the bill is longer and has the furrows on the maxilla extended further towards the point; but I find these characters most variable in the specimens I have examined. Schlegel unites this supposed species with *N. australis*. Gould.

10241. *N. tenuirostris* is a distinct and good species, though approaching near to *N. phaeopus*. When treating of this species we stated that a good character it possesses is the white axillaries; but, as will be seen in the article on *N. phaeopus*, I have examined examples of this latter species from Eastern Africa which had nearly pure white axillaries.
10242. *N. cyanopus*, Vieill. (*australis* et *rufescens*, Gould; *tahitiensis*, Swinh. nec Gmel.), is distinguishable by its rufous grey strongly barred rump and upper tail-coverts. It occurs in Asia, from the coast of Kamtchatka down to Australia and Tasmania, and, according to Brisson and Gmelin, is also found in Madagascar and the Society Islands. In a foot-note in the 'Fauna Japonica,' Schlegel refers to Gould's plate of this species, and identifies it with his own *N. major*.
10243. *N. rufescens*, Gould, is *N. cyanopus* in summer plumage.
10244. *N. madagascariensis* and
10245. *N. cassini*, Swinh., are both *N. arquatus*.
10246. *N. tahitiensis*, Gm. (*N. femoralis*, Peale), is a very distinct and good species. Thanks to Mr. J. E. Harting, I have had an opportunity of examining an excellent water-colour drawing he has of this bird. It somewhat resembles the Whimbrel, but is smaller, and has the underparts ochreous yellow, the axillaries rufous buff, barred with dark brown, paler than in *N. hudsonicus*, the upper parts much more ruddy than in *N. phaeopus*, and the bill much stouter than in that species; besides, Mr. Harting informs me, the base of the mandible appears to be yellow in the living bird. This is the bird referred to and figured (pl. 3) by Cassin in Commod. Perry's Exp. Japan, ii. p. 228, and described by Forster (Descr. ed. Lichtenst. p. 242), from Otaheite, under the name of *Scolopax phaeopus*.
10247. *N. longirostris*, Wils. (*melanopus* et *rufus*, Vieill.), together with the next species, may always be distinguished from the Old-World Curlew by its rufous axillaries. It inhabits temperate America, occurring southward as far down as Brazil. I found it very numerous in Texas and Mexico during the autumn migration, and was astonished to see how much the size of the bill varied in the numerous specimens I killed.
10248. *N. hudsonicus*, Lath. (*borealis*, Gm. nec Forst.; *intermedius*, Nuttall), is the Nearctic representative of our Whimbrel, from which, however, it may easily be distinguished by its axillaries, which are rufous where in the Whimbrel they are white. It is found in Northern America during the breeding-season, and straggles down as far south as Chili during the seasons of migration.
10249. *N. phaeopus*, L., is probably the most widely distributed of the whole family. In the last part of the present work I have treated fully of this species, and refer to that article for particulars.
10250. *N. melanorhynchus*, Bp., from Greenland,
10251. *N. hesitatus*, Hartl., from St. Thomas,
10252. *N. luzoniensis*, Gm., from the Philippines, and
10253. *N. uropygialis*, Gould, from Australia, are all referable to *N. phaeopus*.
10254. *N. minor*, Müller (*minutus*, Gould, *hemirhynchus*, Temm. et Schl.), is closely allied to the next species, but is distinguishable by its much smaller size, paler and more yellowish underparts and axillaries, and shorter and more slender bill; and the legs appear, from the dried specimens I have examined, to have been flesh-coloured when the bird was living, and not plumbeous as in *Numenius borealis*. This diminutive Curlew is found in Siberia, Japan, China, and, according to Gould, in the Moluccas and Australia. I have examined several specimens collected by Dr. Dybowski in Dauria, where it appears to be by no means rare.
10255. *N. borealis* (Forst.) is found throughout America during the breeding-season in the high north, and in the winter as far south as Montevideo and Buenos Ayres; I met with it in Texas in the spring. It has occurred in Greenland and Great Britain.
10256. *N. microrhynchus*, Phil. & Landb., is referable to *N. borealis*.
10257. *N. femoralis*, Peale, is *N. tahitiensis*, Gm.

THE Common Curlew possesses, like the Whimbrel, a most extensive range, being found throughout Europe and Asia down to the south of Africa, and on the islands of the Indian archipelago. Throughout Great Britain it is common during all seasons of the year in one or the other part of the country, though not found, except in occasional cases, during the breeding-season in the south of England. I am, however, informed by Mr. Brooking Rowe that it breeds in Devonshire. I have found it common in the autumn all along the south coast of England, as also on the east coast. Mr. Stevenson writes that in Norfolk this species, "although observed on our coast during every month of the year, has never been known to nest in this county. Further north it breeds in April and May, but throughout the latter month I have remarked them at Hunstanton, and have heard their loud whistle in June when out at sea, and seen stragglers at the same date both at Cromer and Salthouse. Yet, though such may be considered as exceptional cases, the bulk of those which annually visit us in autumn and winter are absent only for a very short period. By the 1st of July Mr. Dowell has known them arrive at Blakeney in some numbers, and has seen them there in flocks of forty or fifty by the end of that month. Between the 25th and 30th of July, I have also watched small parties flying low over the sea at Cromer, keeping steadily on in a south-westerly direction, but rarely exceeding six in number, as if young and old together. Later still in the autumn, their migratory movements are evinced by their cries as they pass over our towns and cities by night, attracted and bewildered by the glare of the lamps; chance stragglers, also, when thus calling to their mates, will frequently answer to a whistle in imitation of their notes. In like manner, attracted by our lighthouses and lightships on the coast, they are heard at times flying round and round for hours, but as far as I can ascertain are never known to 'strike the glasses,' as is the case with many other species. In winter during hard weather their numbers are greatly increased from the north, most of which continue their course southward should the frost continue; but even in the sharpest weather I have seen them in Breydon. Though always plentiful on the Breydon muds, this species is met with in still larger numbers at Blakeney; and thence, westward, along the flat shores of the wash to Lynn, may be termed their chief stronghold in Norfolk. In the spring of 1863 I found them very plentiful at Hunstanton, though almost unapproachable on those level sands."

In Scotland it is, according to Mr. Robert Gray, "an abundant bird everywhere in suitable localities, extending to all the outer islands; it does not, however, breed, so far as I know, on the moors of that group. In the nesting-season, indeed, it is perhaps more numerous in the hilly districts of the southern and western counties below Perthshire and Argyleshire than elsewhere in Scotland." In the autumn and winter, Mr. J. A. Harvie Brown tells me, "large flocks frequent the muddy estuaries of the Forth, Tay, and other larger rivers, and repair at feeding-time to the same fields day after day, until a change of wind causes them to shift to less-exposed quarters. The Curlew, however, does not appear to be so much affected by a change of wind as most of our other shore-birds are."

It has not been recorded from Greenland or Iceland; and as regards its occurrence on the Færoes, Captain Feilden writes that it "is only known in Færoe as an autumnal and winter visitant. Yarrell (*Hist. Brit. Birds*, 3rd ed. p. 513) mentions that this bird visits the Færoe Islands in summer; I think this is a mistake. It is singular that it is there entirely absent as a breeding-species, giving place to the Whimbrel, as it does also to a certain extent in the Shetland Islands."

Through Scandinavia it is common. As regards its range in Norway, my friend Mr. R. Collett states that this bird "is found in large numbers on the coast about Trondhjem-Stift, and throughout Nordland. It is a common summer visitant all along the coast from Lindesnes to the Russian frontier, and is also found in Lapland on most of the extensive moors, which are overgrown with *Rubus chamæmorus* and *Eriophorum*. It is very rarely met with inland, but is found on the high plateaux of the Jotunfjelds, from 3000 to 4000 feet above the level of the sea. These birds only frequent the lowlands during the seasons of migration. Occasionally specimens are found wintering on the low shores of the western coast, on the flats and sand bars covered with sea-weed and left bare by the receding tide. On visiting the west coast in the summer time, it will be found that a large number of these birds are not engaged in the business of incubation, but roam in small flocks from shore to shore the whole summer through. These individuals are doubtless only the young of the preceding year: from this we may gather that most of the Waders and Natatores are not in a condition to breed in their first year."

Bahr likewise writes that the Curlew sometimes winters in Norway, on the coasts of Jæderen. I myself have found the Curlew in most parts of Sweden, and in Finland common in all suitable localities. In Northern Russia it is by no means rare up to the shores of the White Sea. Mr. Sabanæeff records it from the Ural, where, however, he did not meet with it on the eastern slope further north than 57° N. lat. "It is rare," he writes, "near Ekaterinbourg, but very numerous on the steppes near Shadrinsk." Mr. Taczanowski has kindly sent me a few notes on its occurrence in Russia and Poland, in which latter country, he writes, "it is common during migration, and breeds in the marshes of the eastern parts of the country, but everywhere in small numbers; and if there are several pairs in one part they keep at a certain distance from each other. It is much more numerous in the marshy districts of Russia, and especially in the steppes covered with thick grass. Aksakoff, in his 'Notes of a Sportsman in the Government of Orenbourg,' amongst other interesting details, writes as follows:—'In my youth, when travelling through the steppes, I have met with enormous bands of Curlews (in the Government of Orenbourg and Simbirsk) arriving from all sides, which followed me several versts, augmenting continually in numbers by new arrivals, in order to attract me from their nests. The air was filled with the sound of their sonorous and lively whistling, some tumbling before the horses, others along the road, and some perched on a post. One could kill as many as he wanted, as new birds continually appeared, which were not yet frightened. I was very often puzzled; for, ardent sportsman as I was, I have killed so many of them that, not being able to pack them away, and not knowing what to do, I determined not to shoot any more; but new birds arrived, even bolder than the preceding ones, and again the game collected around me.' The small species (*N. tenuirostris*) is the most courageous, and is most attached to its offspring; the Whimbrel is more timid; and the Curlew does not, as a rule, approach near man, but keeps at a respectful distance from the gun, flying round the enemy."

In North Germany, according to Borggreve, it occurs regularly in Silesia and Anhalt during migration; it has twice been found breeding in Mecklenburg; Von Negelein records it as having bred in Oldenburg; and Borggreve himself found the nest in Münster. According to Mr. A. von Homeyer a few breed in Pomerania, at Triebsee on the Trebel moor; and he there took a nest, containing four eggs, on the 12th of May, 1845. The nest was on the open moor, on a some-

what elevated tussock. It is, we are informed by Mr. Benzon, tolerably numerous in Denmark in April and May, and again from July to September, when migrating; a few remain and breed in some parts, as on the west coast of Schleswick and on Læsö. In Holland and Belgium it occurs during the seasons of migration; and Baron de Selys Longchamps writes that he believes that it breeds in the sandy districts, as he has obtained it from the Ardennes in the summer, and has seen it near Ostend in the month of August. It passes through France during the seasons of migration; but, according to Jaubert and Barthélemy Lapommeraye, some few are sedentary in the Camargue. In Portugal and Spain it is numerous during the winter season; Major Irby writes that "it is chiefly an autumnal migrant, some being seen as early as August, and during the winter common;" and Mr. Howard Saunders, concurring with this, adds that, "not being esteemed for the table, it is but little persecuted, and consequently not so shy as with us."

Passing eastward we find it in Savoy not uncommon in October and November, and again in March and April. In Sardinia it is common during the winter season; and Mr. C. A. Wright records it from Malta as occurring in the "spring and autumn, oftenest seen in September and October. It also passes in July, when its well-known call may not unfrequently be heard on still nights." Lord Lilford found it "very abundant on the Ionian Islands from October to April; and a few may occasionally be observed at all seasons of the year;" and Lindermayer says that a few remain throughout the winter in the southern provinces of Greece, but large flocks appear in the spring on their way northward. It has not been known to breed in Greece. I have myself observed the Curlew in various parts of Southern Germany, along the Danube, and near Galatz in the late autumn; and Professor von Nordmann records it as "common during migration on the shores of the Black Sea, but it does not breed there." He remarks that in April 1837 he procured at Odessa a specimen which had the underparts washed with reddish brown. It is doubtless to be met with all along the coasts of Asia Minor; and, according to Captain Shelley, "the Curlew is plentiful throughout Egypt and Nubia, where it frequents the sandbanks on the river and the marshes of the Delta and the Fayoom. I have seen it in Upper Egypt as late as the end of April; but I found it most plentiful in the Fayoom and Lower Egypt, where I have frequently killed specimens." In North-western Africa it is common during the seasons of migration and the winter; and, according to Major Loche, a few remain to breed as far south as Algeria. Mr. Taczanowski writes to me that he met with it commonly at Fezzara, near Constantine, and in many other localities in Algeria. It is likewise found on the Azores; and Mr. F. DuCane Godman records it as occurring on the eastern, western, and central groups.

To the eastward the Common Curlew occurs in India, Dauria, Japan, China, and in the Indian archipelago; but it is most difficult to determine its exact range, as it here meets a closely allied species (*N. cyanopus*, Vieill.), which differs in having the rump and upper tail-coverts brown, and strongly barred. Professor Schlegel, however, writes that he has examined specimens of the present species from Nepâl, Japan, Sumatra, Java, Southern Borneo, and Halmahera. Dr. Jerdon writes that it is "found throughout India, most abundantly perhaps near the sea-coast, but also far inland, frequenting marshes, lakes, and rivers. It is generally seen in small flocks, often alone, but at the time of its arrival or departure sometimes in great numbers. It arrives in September, and leaves in March or April." Dr. Leith Adams also records it from the "lakes of Cashmere and rivers of the Punjab, pretty common;" and Captain Bulger met with it on the

lakes and marshes of Sikkim. Captain Beavan saw a Curlew in Burmah which he believes to be the present species. Mr. Swinhoe writes that it is found on the shores of South China and Formosa in winter; and he further refers to what he considers to be a distinct species, differing in having longer legs and bill, as found in Japan during the summer; but I believe that the bird he refers to is nothing but the Common Curlew. Dr. Dybowski sent home from Dauria specimens of a Curlew which is referred to by Mr. Taczanowski under the name of *N. nasicus*, Temm., which, after carefully reading the description given by Mr. Taczanowski, I believe to be *N. arquatus*. As regards the range of the Common Curlew in Africa, it has been recorded from the eastern, southern, and western portions of that continent.

Mr. J. H. Gurney, writing on the birds of Natal and South-eastern Africa, states that "there are great numbers of these birds in the Bay of Natal; and I think there are two or three species, as they vary much in size. They are exceedingly shy and difficult to shoot; they are gregarious, and feed at low water on the mud-banks; they utter precisely the same note as the Curlew in England, and their habits appear to be the same." And it is, according to Mr. E. L. Layard, "not uncommon" in South Africa "on the whole extent of the sea-border. I never knew of its breeding in the colony, though it is found here throughout the year. I met with it up the whole east coast as far as the Line." Mr. Andersson says that it is "sparingly met with in the interior of Damara and Great Namaqua Land, but it is more frequent along the coast and on the islands. It is most commonly seen in pairs, but at times in small flocks. It is an exceedingly wary bird, and, from the open character of the localities it frequents, often defies the efforts of the sportsman." Mr. R. B. Sharpe, in his paper on the ornithology of Fantee, records it from the Naqua river; Messrs. Shelley and Buckley from the Gold Coast; and Dr. H. Dohrn from Prince's Island, where, however, it is not common.

The Curlew is perhaps one of the most wary and cautious of our waders. Frequenting as it does the open treeless moors and plains during the summer season, and the flat portions of the coasts during migration, it soon perceives any intruder approach; and long before one arrives within gunshot it is up and off, uttering its loud harsh alarm-note. It is surprising how difficult it is to stalk and shoot a Curlew. When travelling along the coast of Finland in the spring of 1861 I found this species common everywhere on the dreary wild moors we crossed, and often stalked them most pertinaciously, generally, however, with no other result than wearied limbs and loss of patience; for the birds would generally allow me to get nearly within shot, and then lifting the wings and taking a preliminary step or two, would rise and fly off, wailing at me as if in mockery. When out collecting on the shores of the Gulf of Bothnia I often spent the whole night on the coast or along some of the small bogs; for at that season (May) the nights were quite light enough to allow one to shoot with a rifle at long distances, and the atmosphere during the balmy soft arctic summer nights is so much preferable to the heat of the day, especially for a shore shooter, that I generally went out collecting at night. When passing through the meadows which fringe the shore I never went far without disturbing a Curlew or two; and their wild uncanny cry, breaking the solitude of the night, reminded me forcibly of the old Scotch idea that the Curlews and such like "lang-nebbet things" are not altogether unconnected with the evil one. During the breeding-season they are especially watchful, and clamorous when disturbed. Mr. Robert Gray writes that in Scotland he has "at various times wandered over

many miles of their moorland solitudes, where the only other bird within hearing was the familiar Meadow-Pipit, whose feeble note served but to deepen the impression produced by the wild cry of the Curlew. This note is most bewildering when the watchful male birds are disturbed on the hill-sides at the time the females are on their nests. One after another rises from the brown heath, till the seemingly lifeless moor rings with their pertinacious outcries. Soon the alarm spreads, and, away in the distance, these wary creatures, scarcely seen against the grey side of the mountain, rise into the air above their mates, hovering uneasily until the cause of the disturbance disappears. Then as the traveller gets to a distance, just out of their sight, they settle beside them again with a strange musical utterance of satisfaction—a long gurgling and quavering note, exceedingly wild, yet not displeasing when we think of the faithful bird assuring his mate that all danger is past. When the young are hatched, the note of the Curlew is even more vociferous, as both birds then join in these wailing remonstrances; I have often caught the chicks when about two or three days old; they squat so close to the ground that it is nearly impossible to find them among rough heath; but on a bare spot a practised eye may discover the little puff-balls cowering to avoid capture. When taken up, however, and set down again, they become quite regardless, standing high on their ungainly legs, and looking about with apparent surprise and wonderment.”

The Curlew is met with breeding over the whole of Northern Europe. In Great Britain it is met with more especially in the north. Mr. J. A. Harvie Brown informs me that “on the mainland of Scotland the Curlew (or ‘Whaup’ of the Scotch shepherds) breeds most abundantly in the southern and midland counties, although in all suitable localities it is found commonly in the nesting-season. Its favourite breeding-grounds are the great level or undulating moors and low hill-ranges of the interior; and it is never found so numerous on the rockier, more broken, and precipitous ground of the western and northern coast-lines. In the inner western islands, however, it is common, but does not seem to nest in the Outer Hebrides. In Orkney it is tolerably plentiful, but becomes much scarcer in Shetland;” and Mr. A. G. More writes that it is “rare in the south during summer, though a few pairs are recorded as breeding in Cornwall and Devonshire. Mr. H. Graves informs me that the Curlew ‘breeds regularly near Charminster, in Dorset, laying its eggs in the furrows of the fallow land;’ but I suspect that in this locality, and also in Wiltshire, the Stone-Curlew (*Edicnemus crepitans*) has been mistaken for *Numenius arquatus*. Further north there are one or two breeding-stations in Shropshire; and Mr. O. Salvin finds the nest in Derbyshire. The Curlew breeds in North and South Wales, and from Yorkshire northwards becomes more numerous.”

Throughout Scandinavia it breeds commonly, but is only occasionally found breeding in Northern Germany; though Jaubert and Barthélemy-Lapommeraye record it as sedentary in the Camargue; and Loche writes that some remain to breed in Algeria.

I found numbers breeding in Finland when at Uleåborg in 1861, and took many eggs near that town. The nests I found were usually placed on a tussock in a marshy locality, or near the water, and invariably contained as a full complement four eggs. It seems, however, that the eggs do exceed this number, or else another female may deposit a fifth egg in a neighbour's nest; for Mr. J. A. Harvie Brown has five eggs taken out of the same nest in Sutherlandshire. I should consider that the fifth egg belonged to another female, as I know of instances where

two Greenshanks have used the same nest, in which eight eggs were deposited, and have heard from reliable collectors that instances of this nature are not so very rare as might be supposed.

During the autumn season the Curlews collect and migrate, being then met with in flocks, more especially on the coasts. They are at this season of the year no less cautious than at other times; and Mr. Thompson, in writing on their habits in Ireland, especially refers to their extreme wariness. This gentleman writes that "in Belfast Bay, in an undulating sweep of the coast, little more than two miles from the town on the county-Down shore, named Harrison's Bay, there is a sand-bank far out of the range of gunshot from any of the fences that half encircle it, and wholly inaccessible to the fowler from any direction without his approach being observed. On this bank the Curlews, before being driven so far off their feeding-grounds by the flowing tide as to place them within gunshot of any part of the shore, assemble day and night, and call most vociferously to all out-liers, as if in dread that a single straggler from their forces, until this time widely scattered over the banks, should be left behind. The gathering-cry having done its duty, they await in 'clamorous confusion' the close approach of the tide, which having reached them, the greater number in a large body, followed by nearly all the others in smaller flocks, rise in rapid flight to a considerable elevation, and, assuming in due time the form of a wedge in front, but with the sides of unequal length, wing their way to some insular rocks about the southern entrance of the bay, keeping up all the while a softly guttural concert, seemingly of congratulation or affection, quite the reverse of their ordinary harsh cry. There, the station being unapproachable without their cognizance, they remain in perfect security until the ebbing tide has again exposed the sand-bank that they left, and just then, with unerring certainty, they return, well knowing that their feeding-ground, at a sufficient distance from the shore to keep them safe from fowlers, is again uncovered. They leave this asylum of safety, not as they started for it, in a large body, but in small detached flocks, flying low and silently, or rarely uttering their low guttural note. They appear consecutively over the western point of Hollywood rabbit-warren; and all hold the same course onwards until they are again spread over the *Zostera*-covered banks. The period of their absence depends on whether the tides be 'high' or 'low;' two hours after their departure I have observed them to return. In the season when Whimbrels are here, these birds accompany the Curlews in their tidal flights. The above is their ordinary proceeding. The following note details some little difference:—Oct. 6, 1837. When high water was first about reaching the Curlew-bank at Harrison's Bay, six of these birds flew over me within shot, as I was riding down Bunker's Hill. When they were out of sight, a single bird, which had doubtless been feeding with them and was left behind, followed in their wake precisely, though they could not have been seen by it. A few minutes afterwards the grand flock sallied from their bank, flying, as usual, down the bay. It was beautiful to observe them at first in picturesque irregularity, then lengthening out to a single string or chain, and so continuing till they disappeared from view. A small party remained behind on the bank, and in silence, until at the report of a swivel-gun fired at the distance of some miles, they commenced first whaaping gutturally, and then calling shrilly to each other. The smaller waders, Dunlins &c., though silent before, now sent forth their shrill calls, which were as likely to have been prompted by those of the guardian Curlew as caused by their hearing the report.

"Sometimes, but very rarely, the tide is so low as not to reach the Curlew-bank, on which

occasions the birds remain congregated on it until the feeding-grounds they had left are once more exposed by the ebb, and then return to them; but from their being easily alarmed, though without sufficient cause, they are usually frightened away. I have noted on one occasion that, after waiting patiently here for nearly an hour after high water, the report of a swivel-gun at no great distance, though not within several 'shots' of their bank, alarmed them; and though their hour had almost come for spreading themselves over the oozy banks, they rose *en masse* high into the air, and took their flight towards the entrance of the bay. Five Herons, rising from the banks at the same time, followed them in a flock."

My friend Dr. E. Rey writes to me that he has measured twenty-five eggs, which average 67.1 by 47.3, the largest measuring 75.5 by 47.5, and the smallest 60.0 by 45.5 millimetres respectively. In my collection I have a considerable series of eggs from Finland, Scandinavia, and Scotland, which in colour vary from light greenish spotted with small dark umber-brown surface-blotches and purplish brown underlying shell-markings, to dark olive-brown, almost covered with dark umber-brown blotches, which are especially numerous at the larger end. The richest-coloured egg I possess is one I procured at Haukipudas, near Uleåborg, Finland, on the 31st of May, 1861. In size my series of Curlews' eggs vary from  $2\frac{2}{40}$  by  $1\frac{3}{40}$  to  $2\frac{3}{40}$  by  $1\frac{3}{40}$ .

Mr. Benzon, writing from Copenhagen, says that very few ever remain to breed in Denmark, but some stragglers are said to breed on the west coast and the islands in the Cattegat. He himself possesses no Danish-taken eggs.

The adult birds figured and described are in my own collection, and the nestling in that of the Marquis of Huntley, to whom I am indebted for the loan of it to figure.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀. Skara, Sweden, May 1870 (*Meves*). *c*, ♂. Pagham, Sussex, July; *d*. Pagham, April 24th, 1872; *e*, *f*. Pagham, autumn (*R. B. S.*).

*E Mus. J. H. Gurney, jun.*

*a*, ♀. Greatham, Durham, January 14th (*J. H. G., jun.*). *b*, ♂. Wolsingham, June 22nd (*C. J. Backhouse*). *c*, ♀. Blakeney, August 5th (*J. H. Gurney, jun.*). *d*, ♂. Greatham, January 16 (*J. H. G., jun.*).

*E Mus. Lord Huntley.*

*a*, *b*, *pull*. Aboyne, Scotland.

*E Mus. J. E. Harting.*

*a*, ♀. Sussex, May 9th; *b*, *c*, ♀. Lincolnshire, February; *d*, ♀. Sussex, September (*J. E. H.*). *e*, ♀. Durham, January (*J. H. Gurney, jun.*). *f*, *g*, ♂. Sussex, September (*J. E. H.*). *h*, ♀. Flintshire, July (*J. Gosford*). *i*, ♀. Marocco, winter (*Olcese*). *k*, ♂. Walvisch Bay, October (*Andersson*). *l*, ♀. Natal, winter (*Ayres*). *m*, ♀. Madagascar, winter (*Van Dam*). *n*, ♂, *o*, ♀. Amoy, December; *p*, ♀. October (*Swinhoe*).

*E Mus. Brit. Reg.*

*a*, ♂. Sussex. *b*, ♂. Athens. *c*, ♂, *d*, ♀. Zoulla, Annesley Bay, January; *e*, ♀. Cape of Good Hope; *f*, ♀. South Africa (*Smith*). *g*, ♂, *h*, ♀. Nepal, winter; *i*, ♀. India (*Major Johnstone*).

## Order V. GAVIÆ.

## Family LARIDÆ.

## Subfamily STERNINÆ.

## Genus STERNA.

- Sterna*, Brisson, Orn. vi. p. 202 (1760).  
*Thalasseus* apud Boie, Isis, 1822, p. 563.  
*Sternula* apud Boie, Isis, 1822, p. 564.  
*Viralva* apud Stephens in Shaw's Gen. Zool. xiii. pt. 1, p. 174 (1825).  
*Thalassæa* apud Kaup, Natürl. Syst. p. 97 (1829).  
*Actochelidon* apud Kaup, op. cit. p. 31 (1829).  
*Hydroprogne* apud Kaup, op. cit. p. 91 (1829).  
*Sylochelidon* apud C. L. Brehm, Vög. Deutschl. p. 769 (1831).  
*Helopus* apud Wagler, Isis, 1832, p. 1224.  
*Planetis* apud Wagler, tom. cit. p. 1222.  
*Haliplana* apud Wagler, tom. cit. p. 1224.  
*Onychoprion* apud Wagler, tom. cit. p. 1277.  
*Laropis* apud Wagler, tom. cit. p. 1225.  
*Hydrochelidon* apud Bonaparte, Comp. List, p. 61 (1838).  
*Hydrocecropis* apud Boie, Isis, 1844, p. 179.  
*Thalassipora* apud Rüppell, Syst. Uebers. p. 140 (1845).  
*Anous* apud Lesson, Descr. Mamm. et Ois. p. 255 (1847).

THE Terns, although closely allied to the Laridæ, form a fairly separable subfamily, containing two genera, which inhabit the Western Palæarctic Region. Of these the genus *Sterna* is represented in all the zoogeographical regions into which the world has been divided, nine species being found in the Western Palæarctic Region. These birds are remarkable for their buoyant, wavering, and swiftly gliding flight, from which their name Sea-Swallows is not inaptly derived. Owing to their short feet, they do not walk well, but are especially strong on the wing, and swim also with ease and elegance, sitting on the water as lightly as a feather. They feed on crustacea, small fish, aquatic insects, &c., which they procure chiefly by picking them up from the surface of the water whilst hovering just high enough above to be able to dip into it; or sometimes they will hover at some little altitude and suddenly plunge down and pick up their food. They are sociable—being usually found in small flocks, and even breeding in company with others of their own species,—and are noisy, frequently uttering their somewhat harsh scream. They frequent the sea-coasts, or occasionally the shores of lakes, and breed in these localities, their nest being a mere depression in the sand near the edge of the water. Their eggs are

white, buffy ochreous, or dark buff blotched and spotted with various shades of brown, black, and violet-grey.

*Sterna hirundo*, the type of the genus, has the bill about as long as the head, nearly straight, slender, compressed, tapering to the point, which is elongated and acute, the ridge of the upper mandible gradually curved, and the lower mandible with the junction of the crura median, scarcely prominent; nostrils large, elongated, linear, basal; wings very long, pointed, the first quill longest; tail deeply forked; legs short, slender, the tibia bare for some distance; tarsus scutellate; hind toe small, elevated; anterior toes small, joined by emarginate webs; claws compressed, acute, curved, that on the middle toe larger than the rest, and having the inner edge slightly dilated.





ARCTIC TERN  
STERNA HIRUNDO.  
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## STERNA HIRUNDO.

(ARCTIC TERN.)

- Sterna paradisea*, Brünn. Orn. Boreal. p. 42 (1764).  
*Sterna hirundo*, Linn. Syst. Nat. i. p. 277 (1766).  
*Sterna macrura*, Naum. Isis, 1819, p. 1847.  
*Sterna arctica*, Temm. Man. d'Orn. ii. p. 742 (1820).  
*Sterna argentata*, Brehm, Beitr. z. Vogelk. iii. p. 692 (1822).  
*Sterna nitzschii*, Kaup, Isis, 1824, p. 153.  
*Sterna brachytarsa*, Graba, Reise nach Farö, p. 218 (1830).  
*Sterna argentacea*, Brehm, Vög. Deutschl. p. 783 (1831).  
*Sterna marina*, Eyton, Cat. Brit. B. p. 55 (1836).  
*Sterna brachypus*, Swains. B. of W. Afr. ii. p. 252 (1837).

*Arctic Tern*, English; *Tarroek*, *Piccatarie*, Shetland (*Dr. Saxby*); *Küsten-Meerschwalbe*, German; *Nordisk Hætteterne*, Danish; *Makrelterne*, Norwegian; *Rödnäbbad Tärna*, Swedish; *Krashka morskaya*, Russian.

*Figuræ notabiles.*

Werner, Atlas, *Palmipèdes*, pl. 5; Naum. Vög. Deutschl. x. Taf. 253; Gould, B. of Eur. v. pl. 419; Yarr. Brit. B. iii. p. 399; Kjærb. Orn. Dan. pl. xl. b, fig. 1; Gould, B. Gr. Br. pt. viii.; Sundev. Sv. Fogl. tab. xlviii. fig. 2.

♂ pileo nigro: genis cum regione paroticâ et collo postico et laterali pulchrè albis, his cinereo minimè lavatis: dorso toto cum scapularibus pulchrè argenteo-cinereis: uropygio et supracaudalibus purè albis: rectricibus alarum argenteo-cinereis, dorso concoloribus: remigibus intùs albis, secundariis etiam hòc colore conspicuè terminatis, pennis omnibus saturatiùs cinereo lavatis: remigibus extimis externè nigricantibus versùs apicem cinerascentibus, pogonium externum et versùs apicem pogonium internum semiamplectentibus: remigum rectricumque scapis albis: caudâ albâ, longâ, rectricibus externis extùs cinerascentibus versùs apicem albis: gutture albo: corpore reliquo subtùs pulchrè argenteo-cinereo: subcaudalibus cum subalaribus et margine alari albis: rostro et pedibus omninò coccineis, unguibus nigris: iride nigricanti-brunneâ.

♀ vix a mari distinguenda.

*Ptil. hiem.* similis ptilosi æstivæ sed fronte albo, pileo postico nigro agnoscenda.

*Av. hornot.* fronte albâ: pileo cum nuchâ nigris, anticè albido variegatis: genis cum collo laterali et postico, et corpore toto subtùs purè albis: dorso toto cinereo, plumis nigricante variegatis et albo terminatis: remigibus et rectricibus extùs saturatè cinereo marginatis et conspicuè albo terminatis: rostro nigricante, ad apicem rubro.

*Pull.* fulvescenti-ochraceus, suprâ nigricante longitudinaliter variegatus: pileo brunnescente, fronte et gutture nigris: corpore subtùs flavicanti-albo, abdomine magis ochrascente.

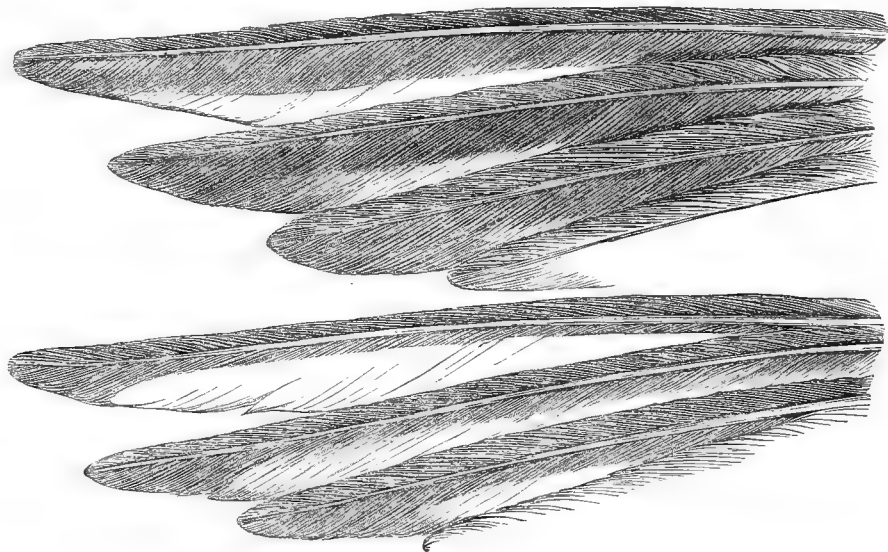
*Adult Male in breeding-plumage.* Crown of the head black, the lower margin being drawn just below the eye; sides of the face white, commencing with a narrow line from the base of the nostril; upper surface of the body delicate silvery-grey, some of the scapulars slightly inclining to white at the tips; rump and upper tail-coverts pure white; wing-coverts coloured like the back; quills dark grey, with white shafts; the outer web of the first primary blackish, and all the other primaries externally margined with hoary grey, which also extends along the inner web in a line parallel with the shaft, occupies the entire tip of the feather and also the interior margin of the inner web for a certain portion of its length; the secondaries tipped with white, forming an alar band; tail-feathers white, with white shafts, the outer web of the two longest feathers dark greyish; under surface of the body delicate silvery-grey, white on the chin; under wing- and tail-coverts entirely white; bill and feet coral-red; claws blackish; iris blackish brown. Total length 15 inches, culmen 1·3, wing 10·4, tail 8·0, tarsus 0·55.

*Adult Male in winter plumage.* Only differs from the summer dress in wanting the black head, and not being so distinctly grey underneath; the forehead is white, and the hinder part of the head black.

*Young bird of the year.* The upper plumage, though grey like the adults, is much mottled with blackish, and has all the back feathers conspicuously tipped with white, the wings and tail-feathers being marked in the same manner; the forehead is white, and the hinder part of the head black, mixed on the fore part with a few whitish spots; the cheeks, hinder neck, and entire under surface of the body are pure white, without any mixture of grey; bill black, reddish at the base of the lower mandible.

*Nestling.* Covered with golden-buff down, inclining to ochre, the upper surface varied with little blackish markings; the forehead and throat brownish black; under surface of the body yellowish white, with the flanks and lower abdomen inclining to brownish.

The figure of the adult bird is taken from a beautiful specimen, in breeding-plumage, procured by Mr. Howard Saunders on the Copeland Islands, the young bird being in our own collection. The latter is described, while the description of the adults is taken from some fine specimens given to us by Mr. Hanbury Barclay.



*Obs.* The old birds of this species are distinguished from the Common Tern by the following characters:—  
1. The tail is much longer, and in the adult birds in summer-plumage reaches beyond the wings. Hence Naumann's name of *macrura*.

2. The tarsus both in old and young birds is much shorter than in the Common Tern.
3. The bill is almost entirely crimson, without any black on the culmen: it is also more slender.
4. *Young birds* are more difficult to tell; but the tarsus is a sure sign of distinction, and moreover there is a less amount of greyish black on the outer primaries, as will be seen by the preceding woodcut.

THE Arctic Tern is found during the breeding-season throughout the whole of the northern Palæarctic and Nearctic Regions, ranging much further north than the Common Tern (*Sterna fluviatilis*); and during the winter season it migrates even as far south as the Cape.

In the British islands it is common, especially in the northern portions. Mr. More gives its breeding-range as "much the same as the Common Tern, and appears to be about equally numerous; and if observed in fewer districts this is probably only because it has been passed over, being either mistaken for, or associated with, the Common Tern." Mr. Rodd includes it in his list of the birds of Cornwall, and says that it is "a common species in summer both on our coast and at Scilly, at which locality its eggs may be obtained every year. In some seasons various parts of England are visited by large flights of these birds;" and Mr. J. Brooking Rowe informs us that it is "common in Devonshire in autumn. On the 8th of May, 1842, great flights visited the Exe; and being in an exhausted state, hundreds were killed with sticks and stones."

In Ireland Thompson records it as common in many localities, especially on the Kerry coast. He states, however, that it is more a marine bird than the common species, in which we cannot agree with him.

In Scotland Mr. Robert Gray says that it is much more numerous than the Common Tern, and that there are numerous breeding-places on the western shores of Ross, Inverness, and Argyleshire; and Captain Elwes found a large colony breeding on Haskeir, a small rock about twelve miles west of North Uist, which was at a considerable distance from their feeding-grounds. Our friend Mr. J. A. Harvie Brown also writes to us respecting this species in Scotland as follows:—"Large colonies of these graceful birds have their breeding-quarters on many of the islands of the Firth of Forth, the other common species (*Sterna fluviatilis*) associating with them, but in smaller numbers. In the beginning of September small flocks, principally composed of immature birds, appear on the coast, moving in a southerly direction; and stragglers are not unfrequently observed as late as the end of the month. Elsewhere along the east coast, colonies are found in almost every county, the numbers increasing apparently towards the north. In East Sutherland, however, as far as our observation extends, the colonies of Terns seem to be composed principally of *Sterna fluviatilis*; but these localities are for the most part upon islands on freshwater lochs. In some colonies not one specimen of *Sterna hirundo* can be detected. In several instances we have met with solitary pairs of Terns (either *S. fluviatilis* or *S. hirundo*) nesting at a considerable distance from the sea, and either breeding entirely in solitude or in company with a colony of Gulls (*Larus canus* or *L. fuscus*). Thus during three successive seasons we found a single pair of Terns breeding at a loch in the south-west of Sutherland, on one occasion finding the eggs. We did not identify the species to our satisfaction, as, contrary to the habit of these birds when found breeding in colonies, they were invariably shy and wild when their breeding-haunt was approached."

Mr. Hanbury Barclay, who has forwarded us some splendid specimens for inspection, found this species common on the Orkneys, and writes that an island off Houten Head, on the main-

land, is annually tenanted by vast numbers of the Arctic Tern and a few Common Terns. The eggs are there deposited early in June, on the bare ground, in any slight indentation, but often protected from the north-west by tufts of long grass. Mr. Barclay remarks that he never found more than two eggs in each nest. Dr. Saxby states that it is very common in Shetland during the summer season.

Our friend Captain Feilden found it numerous in the Færöes, and we give below a few notes which he has sent us on its habits there. He remarked that *St. fluviatilis* does not occur on those islands; for amongst thousands of individuals he failed in observing one single Common Tern.

Throughout Scandinavia it is common, in the far north taking the place of the common species. Godman observed it along the whole of the west coast of Norway; and Mr. Robert Collett writes that it breeds numerous on the Norwegian coast to beyond the Russian frontier, and on Lofoten appears to have quite taken the place of *St. fluviatilis*. In Ostfinmark, Lapland, this species alone occurs, and breeds far inland. In the south it was in 1843 found breeding in numbers on Grip, outside Christiansund, though it is not now known with certainty to occur there; but it undoubtedly does occur on the southern coasts of Norway.

Nilsson speaks of it as common in Skåne, in Southern Sweden. Mr. Löwenhjelm found large numbers breeding on a lake near Gellivare, in the far north of Sweden; and it is probably found throughout that country; for Dresser has himself shot it on various parts of the coast as high up as Torneå. Mr. Ludwig Holtz found it breeding on Gottska Sandön, off Gottland, and says that he observed it chiefly near Ref, on the northern coast, between Kyrkoudden and Söderref, on a point called Tärnudden, or the "Tern point."

Dresser found it plentiful on the coast of Finland, and at Uleåborg it was about as numerous as the Common Tern; and Mr. Sabanäeff informs us that it is common in the Gulf of Finland, at Lake Onega, and on the White Sea. According to Schatiloff large numbers breed on the Sevash; and Meves found them breeding numerous near Archangel. Mr. Gillett, writing on the birds of Novaya Zemlya, speaks of it as tolerably numerous both on the western and eastern coasts. Professor Newton records it as "tolerably common in Spitsbergen, breeding as far as lat. 80° N., where Dr. Malmgren found it in countless numbers in July and August. In Ice Sound it was not very plentiful; but on the 15th of July Professor Nordenskjöld kindly sent me two eggs which he had himself found that day at the entrance. Among the Thousand Islands it was numerous; and the eggs are, of course, looked for by the Walrus-hunters who resort thither. Old Frederick Marten mentions the excellence of their edible qualities; and the regular visitors to Spitsbergen have naturally not lost knowledge of the fact since his time."

Dr. Malmgren, who also observed it in Spitsbergen, writes as follows:—"It breeds numerous on the low islands on all the coasts of Spitsbergen. I saw innumerable multitudes on the Dépôt Island, with their newly hatched young, on the 30th of July, and on an island called Moffen, 80° N. lat., where on the 28th of August the young could fly. We first observed them on the 10th and 11th of June in Treurenberg Bay." Passing again southward to the Baltic, we find it occurring, though by no means so numerous as the Common Tern, on the coasts of the Baltic provinces and North Germany. Pastor Boeck procured it from Rügen; and Mr. Benzon, of Copenhagen, writes that it breeds on the coasts of Denmark. De la Fontaine

states that now and then a few individuals are seen in Luxembourg, especially on the Moselle. Professor Schlegel says that it probably occurs on the Dutch coast; but Mr. Labouchere writes to us that there is no actual instance known of its having been shot there. It does not appear to breed on the island of Borkum now, although, according to Baron Droste Hülshoff, it used formerly to be commoner than *Sterna fluviatilis*. According to Degland and Gerbe it passes regularly along the coasts of France, going down as low as the Mediterranean; it is seen in May and August on the coast of Dunquerque, and has been killed near Bayonne, where, however, it is only accidentally met with. It appears seldom or never to breed below the coasts of the North Sea and Baltic; but in the autumn it moves southward, and is then to be seen in the Mediterranean. Major Loche has recorded it from Algeria as rare, though he gives no instance of its occurrence. Major Irby, however, has given us a specimen in winter plumage from Tangier. To the eastward, in Greece, it is not named by Lindermayer, nor in Southern Russia by Von Nordmann.

During the winter it extends its range as far as the Cape; and Mr. Layard, writing of this species under its name of *Sterna brachypus* in the 'Birds of South Africa,' says:—"During a drive late one evening across a marsh formed by the celebrated hot spring called 'Brandt's Vley,' near the town of Worcester (South Africa), I observed a Tern, new to me, flying in considerable numbers over a portion of open water. Owing to the lateness of the hour I was unable to stop and procure specimens; but a short time afterwards I received a Tern from Tulbagh, a village at the end of the same valley, which is enclosed between high mountains, though distant about sixty miles, which I immediately recognized as belonging to the same species as those at Brandt's Vley. It answers in all respects to Swainson's 'Short-footed Tern;' and as such I consider it."

In Asia this species has been observed both by Radde, who "found it frequenting the steep shores of the Delta of the Angara in July," and by Middendorff, who met with it on the 25th of June near the Taimyr river, where it was then breeding; but Schrenck does not record it, and it appears to be confined to the northern portion of that continent.

It occurs throughout the fur-countries of North America, and has been met with on the New-England coast. Captain Blakiston obtained it from York Factory, Hudson's Bay. Mr. Bernard Ross states it is found on Great Bear Lake; it is mentioned in the 'Fauna Bor.-Am.' under the name of *St. arctica*; and Mr. Murray also records it from the Hudson's-Bay Territory. In Greenland it is common, and there entirely takes the place of *Sterna fluviatilis*, which does not appear ever to occur in that country.

What we have said respecting the habit of *Sterna fluviatilis*, is equally applicable to the present species; and indeed it is difficult to tell the birds apart, unless one can handle them, except by the somewhat darker-coloured underparts. Dresser found them on the north coasts of Finland, where also *S. fluviatilis* was almost equally common, and could never distinguish any difference between the habits of the two species. When the islands were entered by any intruder, the Terns all rose from their nests and, flying overhead, uttered loud cries: sometimes one would, when its nest was disturbed, fly down close to the spoiler, uttering cries of dismay; but usually they kept at some height over head. Their flight is very buoyant and easy; and their movements when fishing on the shores are exceptionally graceful.

Our friend Captain Feilden, who has just returned from the Færö Islands, writes the

following notes on the habits of this Tern:—"The Arctic Tern usually arrives in Færö about the middle of May; but, owing to the extreme cold of this spring, the first I saw made their appearance in Suderö on the 25th of May. On their first arrival they assembled in large flocks, which rested together on the rocks, and fished in company; and often at night I found them settled roosting on the hill-sides 400 or 500 feet above the level of the sea. In about ten days they had all paired; and then the entire line of the coast was fringed with them; every few yards a pair had taken up a position on some rock; and on the not very accessible detached holms and on the lake-islets they literally swarmed. The first eggs I found were taken on the 21st of June; and then hardly any of the nests had more than one egg in them. I have noticed the Arctic Tern hovering in flocks over the small grass-fields surrounding the villages; they floated over the meadow with the same airy flight as when hovering over the sea; but when they seized their food, which appeared to be insects, they alighted with the most graceful motion imaginable. I can only liken it to the movement of one of those coloured air-bladders which children play with, descending in a room, or, perhaps more aptly, to soap-bubbles falling in a perfectly calm evening; but for all that the rapidity of their movements was so great that I never once detected them in the act of snapping their insect prey, the motion being too quick for my eye." Respecting its breeding-habits in Spitsbergen, Dr. Malmgren writes that it there "invariably breeds in colonies, and is scarcely ever seen alone. In a small depression in the ground the female deposits two or three eggs without any nest under them, except a few straws, feathers, &c. She defends her nest with fury. If any one comes too close to the colony, the whole swarm meet the intruder and fly round him, uttering fearful cries; and the nearer he approaches, the bolder and more angry do they become. Some fly at the intruder as if to strike him with their beak, and approach so close that they may almost be caught; or at least one can knock down as many as one wishes with a stick. These attacks are accompanied by such loud cries from the rest of the flock that any one who inadvertently stumbles upon their sanctum is glad to get away as soon as possible. This Tern feeds on all small animals found on the surface of the sea, such as crustaceans, *Clio*, *Limacina arctica*, &c."

This Tern usually breeds in colonies, often consisting of a very large number of individuals. Dresser found them breeding in large numbers on the islands outside Uleåborg, in the Gulf of Bothnia. The nest is a mere depression in the sand, sometimes with a straw or two inside it; or occasionally the bird makes use of a piece of dried grass or sea-weed left high and dry at some spring tide, in which it works out a hollow to contain its eggs. These latter, generally three in number, closely resemble the eggs of the Common Tern; but we quite agree with our friend Mr. Harvie Brown that they are, if any thing, slightly smaller in size than the eggs of that bird. In both colour and shape they are subject to great variation. We have now before us a large series from Dresser's collection, chiefly from Greenland, amongst which are varieties from almost pure unspotted white to a rich greenish colour thickly blotched with dark umber, and from light stone-grey, spotted here and there with brown dots, to almost coffee-brown with thick blackish brown smudges. One peculiar variety is pale bluish green thinly spotted with small light-red dots; and another is bluish with one or two large reddish brown spots. In size they vary from  $1\frac{1}{40}$  by  $1\frac{1}{40}$  to  $1\frac{2}{40}$  by  $1\frac{8}{40}$  inch respectively. Our friend Mr. A. Benzon, of Copenhagen, informs us that he has in his collection eggs from Denmark, the

Færöes, Iceland, Greenland, Spitsbergen, and Archangel, the largest of which (excepting abnormal specimens) measures 46 by 30 millimetres, and the smallest 38 by 28·5.

Mr. J. A. Harvie Brown writes that, having carefully compared a large series of the eggs of *Sterna fluviatilis* and the present species, he considers those of *Sterna hirundo* may often be separated from those of *S. fluviatilis* by their more pyriform shape and smaller size. In order to prove this, he has kindly sent us a table of measurements, most carefully made, of twelve specimens of each species picked at random from a series, which fully bears out his argument.

In the preparation of the above article we have examined the following specimens:—

*E Mus. Sharpe and Dresser.*

*a, juv.* Pagham, Sussex, October 10th, 1871 (*A. Grant*). *b.* Tangiers (*L. H. Irby*). *c.* Fort Kenay, Russian America (*F. Bischoff*). *d, pull.* Long Point Island, 1860 (*C. Drexler*). *e.* Maine, July 1859 (*Coues*).

*E Mus. Howard Saunders.*

*a, b, ♂, ♀.* Copeland Islands, June 29th, 1867 (*H. S.*).

*E Mus. C. B. Wharton.*

*a, b.* Hebrides, June 1872 (*C. B. W.*).

*E Mus. Hanbury Barclay.*

*a, b, c, d, ♂, ♀.* Orkneys, summer of 1869 (*H. B.*).

*E Mus. H. B. Tristram.*

*a, b.* Bamborough, Northumberland, July 21st and 22nd, 1865 (*J. H. Gurney*).







COMMON TERN.  
*STERNA FLUVIATILIS.*

## STERNA FLUVIATILIS.

(COMMON TERN.)

*Sterna hirundo*, Temm. Man. d'Orn. ii. p. 740 (1820, nec Linn.).*Sterna fluviatilis*, Naum. & Br. in Brehm's Vög. Deutschl. p. 779 (1831).*Sterna pomarina*, Brehm, Vög. Deutschl. p. 781 (1831).*Sterna marina*, Eyton, Cat. Brit. B. p. 55 (1836).*Sterna senegalensis*, Sw. B. of W. Afr. ii. p. 250 (1837).*Sterna wilsoni*, Bonap. Comp. List B. Eur. and N. Am. p. 61 (1838).*Hydrocecropis hirundo*, Boie, Isis, 1844, p. 179.*Sterna chelidon*, Licht. Nomencl. Av. p. 97 (1854).*Sterna blasii*, Brehm, Naumania, 1855, p. 295.*Sterna macroptera*, Blasius, J. f. O. 1866, p. 76.*Sterna dougalli*, Layard, B. of S. Af. p. 369 (1867, nec Mont.).

*Common Tern*, *Sea-Swallow*, *Kirmew*, *Picket*, *Tarney*, *Pictarne*, *Rittock*, *Tarret*, *Spurre*, *Scraye*, *Gull-teaser*, English (*Selby*); *Pierre-Garin*, French; *Rondine di Mare*, Italian; *Golondrina de Mar*, Spanish; *Andorhina do Mar*, Portuguese; *Fluss-Meerschwalbe*, *kleinere Mewe*, *kleine Fischmewe*, *Fischmewe*, *grauer Fischer*, *Rohrmewe*, *Rohrschwalbe*, *Schwarzkopf*, *Spirer*, *Schmirring*, *Tänner*, German (*Naumann*); *het Vischdiefje*, Dutch; *Fisktärna*, Swedish; *Makrelterne*, Norwegian; *Hætte Terne*, Danish; *Krashka rashnaya*, Russian.

*Figuræ notabiles.*

Naum. Vög. Deutschl. x. Taf. 252; Wilson, B. of N. Am. vii. pl. 60. fig. 1; Audubon, B. N. Am. vii. pl. 433; Yarrell, Brit. B. iii. p. 396; Gould, B. of Eur. v. pl. 417; Kjærbo. Orn. Dan. pl. xl. a. fig. 5; Schl. Vog. Nederl. pl. 357; Gould, B. Gr. Br. part viii.

♂ *æstiv.* suprâ pulchrè cinereus: capite summo nuchâque nigerrimis: facie laterali albâ, margine superiore à basi naris infrâ oculum usque ad nucham producto: tectricibus alarum dorso concoloribus: remigibus cinereis, rachibus albis, primarii primi margine exteriori nigro, interiore dimidialiter saturatè cinereo et albo, remigibus reliquis cinereis, intus plus minusve albis, pennis minoribus albo terminatis, secundariis intimis dorso concoloribus: uropygio imo et supracaudalibus albis: caudâ plerumque albâ, rectricibus exterioribus plus minusve saturatè cinereis: subtùs cinereus, vix vinaceo tinctus, gutture cum subalaribus et subcaudalibus albis: rostro corallino, versus apicem nigro: pedibus corallinis: iride saturatè brunneâ.

♂ *hiem.* ex *Africa australi* similis ptilosi *æstivæ*, sed loris albo variis, primariis interioribus saturatiùs cinereis, rostro nigricante, et pedibus sordidè flavicantibus distinguendus.

*Adult in summer.* Crown of the head extending backwards far on to the nape, where it somewhat tapers to a point, black; sides of the face and neck white, this colour being drawn in a sharply defined line

from the base of the nostril straight below the eye to the hind neck, skirting the black hood for its whole extent; back and scapulars grey; rump and upper tail-coverts white, the latter slightly tinged with grey; wing-coverts entirely grey like the back, the small feathers on the edge of the wing white, quills grey, slightly darker than the back, the shafts white, with a narrow margin of black running along their inner edge; the outer web of the first primary blackish, and the inner web blackish grey, and then white, running into two longitudinal lines of about equal breadth along the feather; the rest of the primaries grey, darker than the back; the inner webs of all the primaries for the most part white, this colour decreasing towards the inner and smaller quills; the median quills tipped with white; the innermost secondaries grey like the rest of the back; tail forked, the outer web more or less greyish, the inner web white, centre feathers entirely white; throat as well as the under wing- and tail-coverts white; the rest of the under surface of the body grey, with a certain tinge of vinous; bill coral-red, blackish at the tip of both mandibles; feet coral-red; iris dark brown. Total length 13·0 inches, culmen 1·5, wing 10·5, tail 5·6, tarsus 0·7–0·75.

*Obs.* Some specimens are more grey on the under surface than others, though the assumption of this colour does not seem to depend altogether on the season of the year; for a splendid male bird from Malaga, in Mr. Howard Saunders's collection, is very white underneath, though killed in the breeding-season, on the 2nd of June.

*Young.* Head blackish, covered with brownish down, the forehead and cheeks white, as also are the bases of the feathers of the crown; hinder part of the neck, rump, and upper tail-coverts pure white; back and scapulars grey, with sandy-coloured edgings; wing-coverts grey, edged with sandy like the back, the feathers along the edge of the wing blackish; quills exactly as in the adult, excepting that the smaller primaries are more plainly tipped with white, and the innermost secondaries edged with sandy; tail white, tipped with sandy, and suffused with grey, the outer web of the two external feathers being entirely dark grey; under surface of the body pure white, fluffy on the throat and flanks.

*Obs.* The above description is taken from a bird killed in July 1871, and just able to fly, sent to us from Germany by our excellent correspondent Mr. W. Schlüter, of Halle. Another bird forwarded by the same naturalist, which was collected on the 2nd of July 1870, is still younger, and has the head black, mottled with white all over; the dorsal plumes are edged with sandy, before which margin there is an irregular bar of black; on each side of the rump are two patches of black down; and the throat is covered with brownish fluff through which the white pen-feathers are making their appearance. In both these specimens the feet are coral-red, and the bill is for the most part coral-red, blackish along the upper mandible and at the tip of the lower one. Birds killed about October or November are very pretty, and may be described as follows:—

*Young bird in winter.* Forehead quite white, the fore part of the crown white, mottled with black, and the hind part, along with the nape, entirely black; back grey, varied with irregular black markings on all the feathers, which are edged with white; all the quills and tail-feathers tipped with white; the two outer tail-feathers grey on the outer web, the others more or less mottled with this colour; bill black, deep red at the base, and for a great extent of the lower mandible; feet orange-red. Among a quantity of birds sent up from Pagham on the 10th of October was one which had the feet flesh-coloured.

*Winter plumage (S. macroptera, Blasius).* Similar to the summer dress, but the feathers in front of the eye mottled with white; the inner primaries also are losing their silvery grey appearance, and becoming blackish; the bill is blackish, with a tinge of red on the lower mandible, and the feet are yellowish. (Spec. ex Walwisch Bay, October 6th, 1863, C. J. Andersson, mus. H. Saunders.)

We have taken some pains to examine a series of African specimens with a view to determine whether the two species recently described by Professor Blasius (*l. c.*) under the names of *S. macroptera* and *S. macrodactyla*, from the Cape, were really entitled to specific distinction. Mr. Howard Saunders, who has for a long time devoted his attention to the study of the *Laridæ*, has critically examined these specimens with us; and we have come to the conclusion that *S. macroptera* of Blasius, from South Africa, more recently procured by Mr. Jesse on the Red Sea, is nothing but *S. fluviatilis* in winter dress. *S. macrodactyla* we have not yet met with. *S. macroptera* agrees exactly with *S. fluviatilis* in every particular, excepting that the bill is described as blackish. However, on examination we find even in immature birds from Africa a trace of red in the bill, which is still more noticeable in adults; and we attribute the dark colour partly to the season of the year, when both the bill and legs lose their vividness of colour, and partly to an additional fading after death. A younger bird than the one above noticed has the fore part of the head white, and has also the least wing-coverts blackish grey, while the grey on the tail is strongly pronounced.

The description of the adult in summer is taken from a specimen in our own collection, killed in Germany on the 20th of July 1871, for which we are indebted to Mr. W. Schlüter.

*Comparison with the Arctic Tern.* The adults of these two birds are not difficult to recognize when in full plumage; and the present species may always be known (1) by the black marking on the bill near the tip, (2) by the stronger foot and longer tarsus, measuring at least 0·7 inch, and (3) by the wings reaching beyond the tail. In the adult Arctic Tern the bill is entirely coral-red, the tarsus only measures 0·55, and the tail reaches beyond the wings; hence the name of *macrura*, which it sometimes goes by. The young birds are rather more difficult to separate, but may be distinguished by the following characters: viz. by the amount of black on the inner web of the first primary (which is both darker and broader in the Common Tern) and, above all, by the short tarsus of the Arctic Tern (which fully applies to all birds, even the nestlings). Although the adult Common Tern never attains to the entirely crimson bill of the adult Arctic Tern, yet in the young birds the base of the under mandible shows more of an orange-red colour than the immature bird of the other species, which has the bill more or less black.

THE Common Tern is generally distributed throughout Europe, though hardly so abundant as the Arctic in the northern portion of the continent. Like many other *Sternæ* it is common to both the Old and New Worlds, and even extends into Southern Africa.

To Great Britain and Ireland it is a regular summer visitant, and is known to breed, according to Thompson, in a few localities on the eastern coast of the latter country. Mr. A. G. More remarks that it "breeds on various parts of the coast, from the south to the north of Great Britain, and frequents also the islets in many of the Scottish lakes, but has not always been distinguished from the Arctic Tern." Messrs. Gray and Anderson state that it is "a comparatively common species in the Firth of Clyde, but a very few pairs only breed with us;" and Captain Elwes found it common, breeding in the Hebrides. Macgillivray gives the following note respecting its distribution in the British Islands:—"Mr. Selby has found it breeding abundantly on certain situations in the Solway and the Firth of Clyde. I have met with it in great numbers in Barry, South Uist, and the whole range of the Long Island. Messrs. Baikie and Heddle note its arriving in Orkney annually in May, in considerable numbers, and remaining till the end of August. Dr. Edmonston alleges that it is the only Tern that visits Shetland; while Mr. Dunn says he has never seen any other Tern in Shetland or Orkney than the Arctic." Along the southern coasts of England it is not particularly rare, being, however, more common in autumn, at which time of the year great numbers of young are procured. In his account of the Birds of Iceland, Professor Newton writes as follows:—"Mr. Baring-Gould

informs me that the Common Tern (*S. fluviatilis*) has been once found in Thingralla lake. I think there may be some mistake here; for I am of opinion that further investigation will show that species to have but a limited northern range. So far as I can judge from the safest evidence within my reach, it is not found in either the Shetlands or Færoes." We must state, however, that Dresser's collection contains eggs from Iceland, obtained by Dr. Krüper, a reliable authority. Herr Sysselmand Müller thinks that it occurs on the Færoes, but is not sure. Nilsson says it is the commonest Tern in Scandinavia, and is found from Skåne to the polar circle. At Udjaur, in Lapland, Mr. Lowenhjelm saw several in the month of June; and according to Malm it occurs in Western Lapland. Collett states that all along the coast of Norway, from the Hvalærne to above Lofoten, it is found breeding abundantly, but has not been observed at Tromsøe or in Finmark. Dresser found it at Uleåborg, in Finland, almost as common as the Arctic Tern. Kjær-bølling records it as common in Denmark; and Meyer says the same regarding its occurrence on the coast of Livonia. We have in our collection a fine adult bird from the neighbourhood of St. Petersburg. Baron Droste says that they breed on Borkum, but in much smaller numbers than formerly, as they have been almost destroyed by people taking their eggs. On Rottum, however, they breed in thousands, the noise of their wings being almost deafening. Mr. H. M. Labouchere writes to us:—"This bird is very common in Holland, and is found on the canals and lakes all through the country; it arrives in May, and leaves in September. On a voyage from England to Holland this is generally the first bird one sees on entering the mouth of the river Maas, and a dozen or more of these Terns continue flying in the wake of the vessel for many leagues inland." De Selys-Longchamps says that in Belgium it is very common on the coast near Ostend, and on the Scheldt as far as Antwerp. Kræner, writing from Strasbourg, says it is "sedentary from May to August on the Rhine and its tributaries. At seasons when the waters of the Rhine are swollen with rain, it spreads over other parts of the country, and often appears in the centre of our town." Degland and Gerbe observe:—"Common on all the coasts of France. A few breed on the dunes of Picardy, Boulonnais, and Bayonne, and on the Loire." It nests in the Camargue, according to Jaubert and Barthélemy-Lapommeraye. Bailly remarks that in Savoy it generally makes its appearance in April, up to the 8th of May, and in the months of August and September this Tern appears from time to time on the marshes and sheets of water.

In Spain, Mr. Howard Saunders says that it is "abundant on some parts of the Spanish coast, especially on the Mar Menor, where it nests. This is probably its southern breeding-limit; for I did not find any of its eggs amongst a collection sent up from a locality near San Lucar, apparently well suited to its habits, nor did I observe it off Huelva at the end of May." Major Irby has also procured specimens in the Gulf of Gibraltar. It also occurs in Portugal, on the authority of Professor Barboza du Bocage. Mr. E. Vernon Harcourt states that it breeds in Madeira; and in the Azores, writes Mr. Godman, it "comes about the middle of April, and is to be seen in considerable numbers about the sea-coast and mountain-lakes, departing, I was told, about the middle of September. It breeds on the small islands about the sea-coasts." It nests in the Canaries, according to Dr. Bolle, but is rare on the western islands. Loche records it as very common on the coasts of Algeria; but Dr. Taczanowski states that by him it was seldom seen at Fezzara and behind Constantine. Mr. C. A. Wright says that in Malta a few are found in spring,

autumn, and winter. Malherbe writes concerning its occurrence in Sicily:—"Common during migration in May; but still it appears rare near Messina." Dr. Giglioli, in his paper on the birds of Pisa, remarks that it was not very plentiful near there. In the Ionian Islands, as stated by Lord Lilford, it is rare, but occurs occasionally in spring at Corfu, and on the coasts of the mainland. Lindermayer writes:—"Arrives the earliest of the Terns in the spring, and breeds in Greece. Appears to leave in September, only a few remaining later." Mr. W. H. Hudleston found it plentiful near Mesolonghi during the latter half of May.

Mr. Robson, of Ortakeuy, very kindly sends us the following note:—"This species is pretty common in Turkey in Europe and Asia Minor. Flocks arrive about the latter end of April, and continue for a short period in the Bosphorus, the Sea of Marmora, and the Black Sea. They are often at this period seen in quantities, flying and fishing for miles up and down these waters, in company with the Porpoises, who frighten the small fish upwards near to the surface of the water; these then become an easy prey to many species of Terns, which dart from overhead into the water after them. Numbers of these birds are also seen up the Khathane ('Sweet waters of Europe') at this season. I never see them in the summer; but I have no doubt they breed on the shores of the Sea of Marmora and the Black Sea. They return very early in the autumn migration, a few staying over the winter." From Erzeroom the present species was sent by Messrs. Dickson and Ross, who write as follows:—"Procured May 24th. Found in the stomach fish. Iris hazel. Frequents the river; common. Breeds on the slips of land that are laid bare by the diminishing of the waters of the river; it makes no nest, but lays its eggs on the ground." De Filippi says that, during his journey in Persia, he met with it at Mianah and Enzeli. Von Nordmann states that it is "very common throughout the Euxine region, both on the sea-shore and near the fresh water." Ménériés found it during his journey to the Caucasus plentiful at Saliane, at the sturgeon-fisheries. Lehmann procured it on the Caspian sea, on the 10th of May, and observed it on the Emba. None of the Siberian travellers record this species as occurring there; but Dr. L. Taczanowski mentions a specimen having been killed on the river Onon, where it is said to breed. Dr. Jerdon gives the accompanying note on the present species:—"The Common Tern of Europe appears to be rare in Southern and Central India, but, according to Adams, is common on the Indus, and the rivers of the Punjab, and also on the lakes of Cashmere. It does not breed, as far as is known, in India. I procured it, on one occasion only, on the lake of Ootacamund, in the Neilgherries." Major Irby says that it was occasionally seen in Oudh and Kumaon; and more recently Dr. Stoliczka has procured it on the Indus, near Puga. A specimen is in the Calcutta Museum from Ceylon, as stated in Blyth's Catalogue. Père David records it from Peking and Mongolia; and Mr. Swinhoe gives the following note on its habitat in the Chinese empire:—"Central China; never yet observed on the coast. I have a specimen from Hankow."

In Africa we find it procured by Rüppell on the Red Sea, in breeding-plumage; and Von Heuglin states that it is found in pairs on the north coast of Egypt, in winter and spring. Mr. Jesse lately shot one at Zoulla during the Abyssinian expedition; and it has been recorded by Dr. Finsch, in his paper on the collection, as *Sterna macroptera*, Blasius. This we have already stated to be, in our opinion, only the Common Tern in winter plumage, having observed several specimens from different parts of Africa.

Lastly, as regards its distribution in America, where it has been called *S. wilsonii* by Prince Bonaparte, Dr. Elliott Coues, who has written an excellent monographic account of the Terns of the Nearctic Region, agrees with us that the American Tern is not to be separated from *S. fluviatilis* of Europe. It seems to be found in most parts of North America; Mr. Lawrence gives its range from Texas to Labrador. Audubon writes:—"I have observed this species along the Atlantic coast of North America, from Galveston Island, in Texas, to the Straits of Belle Isle, on the coast of Labrador, both in spring and in early autumn. But when on the islands of Galveston Bay in the month of April, I saw only a few arriving there from the west; whereas in the beginning of May great numbers arrived there from the east, settled at once, and began breeding. I felt convinced that the numbers which came from the direction of the Floridas were much greater than those which arrived from the westward, and judged it probable that vast numbers had at the same time left the peninsula on their way northward. Should other travellers observe the same or similar phenomena at the season mentioned, it will be proved that this species does not extend its autumnal migration as far as several others, which I observed arriving at Galveston Island from the south-west—for example, the Least Tern (*Sterna minuta*), the Cayenne Tern (*St. cayana*), and the Black Tern (*St. nigra*)." Dr. Otto Finsch writes to us as follows:—" *Sterna wilsonii*, Bp., is without doubt the same as our *St. hirundo*, L., as already stated by Prince Max. von Wied (J. f. O. 1859, p. 58). I have North-American specimens before me which I cannot possibly find to differ from the European bird, either in size or colour. On the other hand, the North-American *Sterna fosteri* is easily distinguishable from *Sterna hirundo* by its longer tarsus and toes, and the white outer web of the outer tail-feathers, which latter are always grey in *Sterna hirundo*."

The celebrated Alexander Wilson, so aptly named by Mr. D. G. Elliot "the poet naturalist," was one of the best describers of the habits of birds; and we have taken the following account of the Common Tern from his great work the 'Birds of North America':—"The present species, or Great Tern, is common to the shores of Europe, Asia, and America. It arrives on the coast of New Jersey about the middle or twentieth of April, led no doubt by the multitudes of fish which at that season visit our shallow bays and inlets. By many it is called the Sheep's-head Gull, from arriving about the same time with the fish of that name. About the middle or twentieth of May this bird commences laying. The preparation of a nest, which costs most other birds so much time and ingenuity, is here altogether dispensed with. The eggs, generally three in number, are placed on the surface of the dry drift-grass, on the beach or salt marsh, and covered by the female only during the night, or in wet, raw, or stormy weather. At all other times the hatching of them is left to the heat of the sun. These eggs measure an inch and three quarters in length by about an inch and two tenths in width, and are of a yellowish dun-colour, sprinkled with dark brown and pale indian ink. Notwithstanding they seem thus negligently abandoned during the day, it is very different in reality. One or both of the parents are generally fishing within view of the place, and, on the near approach of any person, instantly make their appearance over head, uttering a hoarse jarring kind of cry, and flying about with evident symptoms of great anxiety and consternation. The young are generally produced at intervals of a day or so from each other, and are regularly and abundantly fed for several weeks, before their wings are sufficiently grown to enable them to fly. At first the parents alight with

the fish which they have brought in their mouth or in their bill, and, tearing it in pieces, distribute it in such portions as their young are able to swallow. Afterwards they frequently feed them without alighting, as they skim over the spot; and as the young become nearly ready to fly, they drop the fish among them, where the strongest and most active has the best chance to gobble it up. In the mean time the young themselves frequently search about the marshes, generally not far apart, for insects of various kinds; but so well acquainted are they with the peculiar language of their parents that warn them of the approach of an enemy, that on hearing their cries they instantly squat, and remain motionless until the danger be over.

“The flight of the Great Tern, and indeed of the whole tribe, is not in the sweeping shooting manner of the land-Swallows, notwithstanding their name; the motions of their long wings are slower, and more in the manner of the Gull. They have, however, great powers of wing and strength in the muscles of the neck, which enable them to make such sudden and violent plunges, and that from a considerable height, too, headlong on their prey, which they never seize but with their bills. In the evening, I have remarked, as they retired from the upper parts of the bays, rivers, and inlets to the beach for repose, about breeding-time, that each generally carried a small fish in his bill. As soon as the young are able to fly, they lead them to the sandy shoals and ripples where fish are abundant, and, while they occasionally feed them, teach them by their example to provide for themselves. They sometimes penetrate a great way inland, along the courses of rivers, and are occasionally seen about all our numerous ponds, lakes, and rivers, most usually near the close of the summer.”

Macgillivray writes as follows:—“With us the Terns arrive in straggling flocks in the beginning of May, and soon after betake themselves to their breeding-places, which are sandy tracts, gravelly or pebbly ridges on the shore, rocky ground, or sometimes low rocks. In the latter kind of situation they make an imperfect nest of bits of grass or fragments of dry seaweeds; but on sand they merely form a depression. When walking along the sandy shore, no bird nearer, perhaps, than a quarter of a mile, you may see one or two of them coming up from a distance, increasing their cries as they approach, then wheeling and plunging over and around you, and at length flying off. Proceeding at a moderate height, they stop now and then, hover a moment, dip into the water, and secure a sand-eel or young coal-fish. Many attend on the fishermen or others who are catching sand-eels for bait or food, to pick up those which slip from them disabled. On such occasions they are very vociferous, as they also are when they have fallen in with a shoal of fry. They never dive; but I have often seen them alight on the water and swim a little; and sometimes a whole flock may be observed reposing on the placid bosom of the waters, affording a very pleasing spectacle. They are very bad walkers; but on wing their movements are easy and elegant; they skim along, boundingly, with great speed, ascend or descend, deviate to either side, stop short in an instant, hover in one spot like a Hawk, drop, dive, or plunge headlong with surprising adroitness. Their mode of flying, however, does not resemble that of a Swallow; and they obtain the popular name of Sea-Swallows rather on account of their forked tail. In very stormy weather they fly little, but shelter themselves by lying on the shore. When satiated with food, or tired, they rest in the same manner; and when the young are able to fly, the whole colony often settle at night on some sand-point projecting into the sea, or on an elevated beach. During moonlight their cries may often be heard at night; and some-

times, at low water, they search the shores for sand-eels at that season. When the young have been fed for some time by their parents after leaving the breeding-places, they begin to separate from them, and at length live mostly apart. By the middle of September they have all left our northern coasts, and by the end of that month they have disappeared from the southern. Some individuals occasionally remain during winter in the south of England."

Mr. Howard Saunders has kindly contributed the accompanying note:—"This species nests abundantly along the shingle between Rye and Dungeness, where its congener (*S. hirundo*) has often been asserted to breed; but for this I am not aware that there is the slightest foundation. At the Farne islands both species are found, but they always nest in separate colonies. Off the Lancashire coast, on the Island of Walney, I found both species breeding; the neighbouring Island of Foulney was only frequented by three or four pairs of *S. hirundo*. In Ireland the same remarks apply to colonies on the islands and coast; but whereas *S. fluviatilis* nests abundantly at Strangford and other inland loughs, I never knew *S. hirundo* deposit its eggs away from salt water. I found it breeding abundantly on the flats. It was nesting in numbers on the mud banks and flats off San Carlos de la Rápita, near the mouth of the Ebro, where I obtained specimens. I also noticed it in many parts of the Mediterranean, and procured an example in full breeding-plumage at Malaga. In Holland the ornamental fishponds, and those which our ancestors would have called 'stews,' are frequently covered over with netting to prevent the Terns from taking the fish; and one day at Utrecht I was much amused by watching the ineffectual 'stoops' of some young Terns who had not yet had time to gain experience; for this was in September."

In his work on the birds of Borkum, Baron Droste states:—"They nest on the dune hillocks, which are covered with short grass, their nests being placed sometimes close to each other, and sometimes apart, but never in such concentrated numbers as those of the Sandwich Terns. They do not build any regular nest, but merely line a depression in the ground with dry sea-grasses. . . . They live, like all Terns, on small fishes, shrimps, and small crustaceans. In East Friesland *Gasterosteus spinachia* seems to form their chief food. They do not appear to fish in the open sea so much as the shallow parts of the shore and inland pieces of water. They move the wings sometimes quicker, sometimes slower, always, however, powerfully, so that the body rises and falls in regular movements. They move slowly about, looking carefully after their prey, and, after fluttering a little, drop down on it, dipping half the body into the water, so that the wings and tail appear like three points left out. They devour their prey on the wing, but often carry it about a short time in the beak."

Another kind friend, Mr. Alfred Benzon, of Copenhagen, writes us as follows:—"The Common Tern breeds on all our inland lakes and deep penetrating fjords, whereas the Arctic Tern is only found on the coasts. The eggs of the two species resemble each other much, and are subject to considerable variation. This species lays three oval eggs; and I possess specimens of a light bluish-white, unspotted, to dark coffee-brown strongly marked varieties. The ground-colour is generally greyish yellow, often running into greenish or brownish, very seldom bluish white. The shell-markings are bluish grey, and the overlying surface-spots varying from brown to black, and either distributed over the entire egg or collected at the larger end, sometimes forming a ring round it. Of the eggs I possess in my collection, from Denmark, Germany, and

Greece, the largest measures 45 millims. by 31·5 millims., and the smallest 39 by 30·5 millims., and an abnormal egg from Fyen, taken on the 20th May, 1865, measures 27 by 20 millims.”

For the following interesting note we have to thank Mr. John Henry Gurney, jun., who has so often contributed his observations to these pages:—“As I believe there are few, if any, instances on record of Terns being tamed, I shall make no apology for detailing the only one which I have ever known of. Mr. Green, taxidermist, of Stockton-on-Tees, found two nestlings at the mouth of Greatham ‘beck,’ the parish presided over by the well-known naturalist, Dr. Tristram: they were only a few days old when found. Green had taken what was called Bousfield’s fishing-place, and here he reared them up until they were strong enough to fly about and cater for themselves. He fed them chiefly upon pieces of flatfish. But the intimacy did not end here. So attached did they become to him that they would answer to the names which he gave them, or come to his call or whistle; and when the men were fishing, they were, as the men expressed it, ‘among their feet like Wagtails among cows’ feet.’ Crowds came to see them; and it was a source of profit to Green, who put an advertisement in the local newspaper. Once in the dry weather his pets were nearly dying of hunger; but a ‘beck’ was dammed up and the water bailed out, and, some trout being got for them, a sort of cistern was formed to which they could come and feed. During the autumn they disappeared for a fortnight, and Green met them five miles down the river. When he called they came into the cobble, and he gave them some pie, and the intimacy which had been interrupted was renewed again, and continued until October came round, when, I believe, they migrated with the rest of their congeners.”

In Dresser’s collection is a series of the eggs of this bird from Denmark, Iceland, and Finland; and amongst these are varieties from pure unspotted pale blue to dark olive, blotched all over with dark brown spots. The most beautiful variety is one collected by Dr. Krüper in Iceland, which is of a pale clay-colour, marked here and there with large pale purplish shell-markings, and over these a few large brown blotches.

In size the above eggs average  $1\frac{3}{4}$  by  $1\frac{1}{4}$  inch. Dr. E. Rey writes to us as follows:—“I have taken the eggs of this Tern on the Elbe from the 18th of May to the 20th of June, finding two, seldom three, eggs in each nest. The average size of thirty-six eggs from Smyrna (where *Sterna arctica* is not found) is 40·6 by 30·4, the largest measuring 44·0 by 30·7, and the smallest 38 by 30 millimetres respectively.

In the preparation of the above article we have examined the following specimens:—

*E Mus. Sharpe and Dresser.*

*a*, ♀. Cookham, Berks, July 13th, 1870 (*J. Ford*). *b*, ♀. Pagham, Sussex, July 30th, 1870 (*R. B. Sharpe*). *c*. Pagham, September 1870 (*R. B. Sharpe*). *d*. Pagham, November 1870 (*A. Grant*). *e*. Belgium (*W. Schlüter*). *f, g, h, i*. Germany (*W. Schlüter*). *j*. St. Petersburg (*Dode*). *k*. Table Bay, S. Africa (*E. L. Layard*).

*E Mus. Howard Saunders.*

*a*, ♀. Farne Islands, Northumberland, June 12th, 1864 (*H. S.*) *b*, ♂. Mew Islands, Strangford Lough, August 28th, 1866 (*H. S.*). *c, d, e, f, g*. Tenby, October 1871 (*H. S.*). *h*. Malaga, June 2nd, 1871 (*H. S.*). *i*. N. America (*Krider*). *j, k*. Walvisch Bay, Damaraland (*C. J. Andersson*). *l, m*. Table Bay, South Africa (*E. L. Layard*).

*E Mus. Lord Walden.*

- a.* Cookham, Berks, December 1864 (*J. Ford*). *b*, ♂. Sea of Marmora, April 28th, 1865 (*T. Robson*). *c*, ♂. Walvisch Bay, Damaraland, November 2nd, 1863 (*C. J. Andersson*). *d.* Zoulla, August 17th, 1868 (*W. Jesse* = *S. macroptera*, Finsch, Trans. Z. S. vii. p. 303).

*E Mus. J. H. Gurney, jun.*

- a*, ♂. Hunstanton, August 1870 (*Gunn*). *b.* Leadenhall Market, October 19th, 1870 (*J. H. G.*).

*E Mus. A. Basil Brooke.*

- a.* Lough Erne, July 29th, 1871 (*A. B. B.*). *b*, ♂. S. Antioco, Sardinia, May 4th, 1871 (*A. B. B.*).

*E Mus. Lord Lilford.*

- a*, *b*, ♂, ♀. Annet, Scilly Isles, July 1852 (*L.*). *c*, ♂. St. Agnes, Scilly, July 1852 (*L.*).





J. H. Keulemans del.



M. & N. Hamhart imp.

ROSEATE TERN.  
STERNA DOUGALLI.

## STERNA DOUGALLI.

(ROSEATE TERN.)

- Sterna dougalli*, Mont. Orn. Dict. Suppl. (1813).  
*Thalassæa*, Kaup (*Sterna dougalli*, Mont.), Natürl. Syst. p. 97 (1829).  
*Sterna paradisea*, Keys. & Blas. Wirbelth. Eur. p. 97 (1840).  
*Sterna macdougalli*, Macg. Man. Brit. B. ii. p. 233 (1840).  
*Hydrocecropis dougalli* (Mont.), Boie, Isis, 1844, p. 179.  
*Sterna gracilis*, Gould, Proc. Zool. Soc. 1847, p. 222.  
? *Sterna bicuspis*, Licht. Nomencl. Avium, p. 98 (1854).  
*Sterna douglasi*, Schlegel, Mus. Pays-Bas, Sternæ, p. 24 (1863).  
“*Sterna tenuirostris*, Licht.” fide Blas. Journ. für Orn. 1866, p. 80.  
*Sternula korustes*, Hume, Stray Feathers, ii. p. 318 (1874).

*Sterne de Dougall*, French; *Paradies-Meer-Schwalbe*, German.

*Figuræ notabiles.*

Werner, Atlas, *Palmipèdes*, pl. 3; Naumann, Vög. Deutschl. taf. 251; Gould, B. of Eur. pl. 418; id. B. of G. Brit. v. pl. 71; id. B. of Australia, pl. 27; Audub. B. of Am. pl. 437.

♂ *ad. ptil. æst.* pileo et nuchâ nitenti-nigris: dorso et tectricibus alarum cum scapularibus pallidè cæruleo-canis: uropygio et supracaudalibus albis cano lavatis: caudâ longissimâ, albâ: remige extimo in pogonio externo nigro, reliquis griseo-canis, in pogonio interno saturatè griseis, usque ad apicem albo marginatis: corpore subtùs albo, gastræo rosaceo tincto: rostro ad basin rubro et ad apicem nigro: iride fuscâ: pedibus rubro-aurantiacis.

*Ad. ptil. hiem.* rostro nigro, ad basin fusco: fronte et capitis lateribus albidis: pileo et nuchâ fusco-nigris, inconspicuè albo notatis: caudâ brevior: tectricibus alarum minoribus fusco lavatis: corpore subtùs albo.

*Adult in summer* (Massachusetts, 30th July). Crown and nape deep glossy black; back and upper surface of the wings delicate light French grey; rump and upper tail-coverts white, washed with grey; rest of the plumage pure white, except that the undersurface of the body is tinged with delicate light rose-colour; first primary with the outer web black, the rest having this part hoary grey; inner webs of the primaries dark grey, broadly margined to the tip of the feather with white; bill red at the base, otherwise black; iris dark brown; legs reddish orange. Total length about 17 inches, culmen 1·7, gape 1·95, wing 9·0, tail 9·0, the lateral rectrices extending nearly 6 inches beyond the central ones, tarsus 0·75.

*Adult in winter.* Forehead and cheeks white; crown and nape brownish black, slightly marked with white; lesser wing-coverts along the edge brownish; tail much shorter than in summer, and the underparts without any trace of rose-colour; otherwise coloured as in the summer plumage.

*Young* (Massachusetts). Crown dirty white with a light brownish tinge, closely marked with blackish, and

becoming dull black on the sides and nape; back dull buffy or dusty white, closely marked or vermiculated with blackish, some of the feathers with subterminal blackish margins; scapulars and inner secondaries with a dark centre and subterminal blackish margins; wings as in the adult, but duller and darker; the wing-coverts slightly marked like the back; tail short, some of the feathers slightly marked with blackish brown; underparts pure white; bill black; legs dull reddish.

It would appear that there is yet much to be learnt respecting the precise range of the present species, as the localities whence it has been recorded are in many instances very far apart. In Europe it has been met with on the west coast from the British Isles to the Mediterranean; and though it has been received from the Cape of Good Hope, yet there seems to be no reliable instance of its occurrence on the west coast of Africa. Eastward of Africa it has been obtained in Ceylon, the Andamans, and Australia; and in the Nearctic Region it is found on the east coast of America from New York to Honduras, but I do not find it recorded from the west side of that continent.

In Great Britain it is, comparatively speaking, rare on the shores of England; but it breeds regularly in Scotland and Ireland.

It was first discovered in Scotland by Dr. McDougall, who informed Montagu that the place of resort of this species were two small, flat, rocky islands in the Firth of Clyde, called Cumbrey Islands, in Milford Bay. On these islands the common Tern swarmed, so that the Doctor and his companion could scarcely step without treading upon the young birds or eggs; of the latter two were usually together, but sometimes as many as twenty, which bespeaks a congregate incubation. The Doctor noticing that one shot by accident by one of his companions differed from the common Tern, got them to shoot two more. He remarks that on the wing the present species can distinguished by the comparative shortness of its wings, the whiteness of its plumage, and the elegance and comparative slowness of its movements. Mr. Robert Gray says that though many years have elapsed since it totally disappeared from "The Allans," where it was originally met with, it is still found in considerable numbers in many parts of the western counties. The principal breeding-place is situated in Kilbrannan Sound, separating Arran from Kintyre; and here some two or three years ago he gathered a basketful of eggs in a few minutes. A few pairs, he adds, "have located themselves in Inchmoin, in Loch Lomond, where they breed in company with the Arctic, Common, Lesser, and Sandwich Terns. The island is the property of Sir James Colquhoun, Bart., and is strictly protected, as it certainly ought to be. It still frequents the Culbin sands in Morayshire, and has also been found in East Lothian by Mr. Turnbull, who states that it is not uncommon, and that it breeds on the isle of May." With regard to its occurrence in England, it is said formerly to have bred on the Farn Islands. Hewitson states that it breeds on Foulney Islands, in Lancashire, and Mr. Rodd that it nests regularly in Cornwall. Mr. Cordeaux remarks that it is now quite extinct on the Farn Islands, where a few pairs formerly nested, and that he knows of no recent instance of its occurrence off the coasts of the Humber district.

In Ireland, according to Thompson, the Roseate Tern is a regular summer visitant, known to breed in a few localities on the east coast. In 1827 he found it breeding on Mew Island, one of the three Copeland Islands; and on different occasions when that island was revisited this species was obtained until 1850, when the island was found deserted by the Roseate as well as

the other species of Terns. Other localities enumerated by Thompson, where the species has been obtained, are:—Couswater Point, in Belfast Bay; Portaferry (Strangford Lough); Rockabill, on the Dublin coast; Lambay Island, Drogheda, and Dublin Bay; Wexford and Roundstone, on the Galway coast.

It is stated to have occurred in Scandinavia; but Professor Nilsson remarks that he himself has never met with it; and he appears to doubt its ever having been obtained there; but there appears no doubt that it has been met with in Denmark, where, Mr. Benzon informs me, it “is of rare occurrence, but is now and then seen on the west coast of Jutland. Dr. Heiberg certainly met with the Roseate Tern in 1874, at Sperring Sö, near Thisted, where on an island there is a large colony of *Larus ridibundus*, *Sterna anglica*, and *Sterna cantiaca*. In the year in question the present species arrived about the middle of April. On the wing it was easily distinguishable from *Sterna anglica* and *Sterna cantiaca* by its longer tail, different cry; and it kept apart from these and generally flew at a greater altitude.” Naumann says that one was seen at the mouth of the Schlei, in Schleswig, in 1820, and that he himself saw two pairs in the previous year on Amrom, an island near the west coast of Schleswig. He adds that it very rarely appears on the shores of the Baltic, but is occasionally seen on the German coasts of the North Sea. According to Mr. Cordeaux, Mr. Gätke has on two occasions met with it on Heligoland. Baron von Droste Hülshoff says that it has once been obtained on the Island of Borkum. It is stated to be of occasional occurrence in the autumn at the mouth of the Scheldt; and Messrs. Degland and Gerbe say that it is an accidental and rare visitant to the coasts of Northern France. I do not find it recorded from Spain; but Mr. Howard Saunders, in his paper on the Terns (P. Z. S. 1876, p. 652), states that he has examined one in adult plumage from the Balearic Isles, shot in May, and now in the collection of Canon Tristram; and Baron J. W. von Müller records it as occurring sparingly on the coast of Provence during spring. According to Salvadori it is extremely rare in Italy, having, in fact, only once occurred in Liguria (on the 22nd June, 1822); and Dr. Krüper states that it is of extremely rare occurrence in Greece. Mr. Howard Saunders states (*l. c.*) that he has not seen any specimens from the west coast of Africa, all those so marked from there being the common Tern in winter plumage. But it certainly occurs in the Azores; for Mr. F. DuCane Godman writes (N. Hist. Azores, p. 38) as follows:—“Mr. S. Dabney, of Fayal, told me that when he was in Flores, about the year 1855, he shot several Terns with pink breasts. During my visit to that island I kept a sharp look-out for them, but did not see any, nor could I find any one amongst the inhabitants who knew the bird, though *S. fluviatilis* was common enough. On my return to Fayal I one day took a walk to Castello Branco, a large high rock almost detached from the mainland. There were a great many Gulls and common Terns flying about; and whilst I was watching them as they flew along the side of the cliff, I noticed five or six Roseate Terns amongst them. Some of these came within a few yards of me; but I did not shoot at them, as they would have fallen into the sea at the foot of the cliff, where I could not have picked them up. I suspect this species arrives later than the common Tern, as I afterwards saw several more near the west point of the same island.” It is not recorded by Mr. Layard; but there is a specimen in the British Museum from the Cape of Good Hope. Mr. Saunders has seen it from Natal; and it is also said to be found off the Island of Rodriguez.

The records of its occurrence in Asia are but scanty. Professor Schlegel says that in the

Leyden Museum there is an example, in full summer dress, from Bengal, obtained by M. Dussumier. Mr. Howard Saunders has received it through Mr. Vincent Legge from Ceylon; and Mr. Wardlaw-Ramsay obtained it, in full breeding-plumage, in the Andaman Islands.

It has also been obtained in Australia, and redescribed by Mr. Gould under the name of *S. gracilis*. Mr. Gould says that Gilbert obtained it on the Houtmanns Abrolhos, off the western coast of Australia, where, he states, it is very numerous, continually moving about from one part of those islands to another, and settling during the heat of the day on the coral ridges in large flocks. He was informed that it breeds there in great numbers during the month of November; but he was too late to procure its eggs.

In America it is common on the Atlantic coasts of the United States. Dr. Gundlach states that it has been observed on the coasts of Cuba and the northern shores of Porto Rico; Mr. O. Salvin met with it on the coast of British Honduras; and there is a specimen in the British Museum, registered as having been obtained off "Tabogo," which is probably a slip of the pen for Tobago.

I find but little on record respecting the habits of the present species, which do not differ much from those of its allies; but its flight is stated to be slower, and its voice differs from that of the common or the Arctic Tern. Thompson says that, according to Captain Walker, of Belmont, the nest of the Roseate Tern is ingenious: the sand is slightly hollowed; and to prevent the eggs rolling away it is surrounded by a small hoop about three inches in diameter, made of bent (a strong grass which grows on the sand-hills) and put very neatly together. Mr. A. Benzon, of Copenhagen, who, as above stated, informed me that Dr. Heiberg found it breeding near Thisted, in Denmark, in 1874, writes to me as follows:—"On the 16th May the Doctor took one egg, and on the 20th May two eggs out of another nest. They were, like those of *Sterna anglica*, placed in the more elevated portion of the island, in a dry sandy place, covered with short grass, a little apart from where *Sterna anglica* bred. The birds were on the nests; so that there could be no mistake about them. These eggs, which are now in my collection, are very characteristic, and differ not a little from others sent to me from America, Germany, and England as those of the Roseate Tern. These latter resemble both in coloration and size those of the common Tern, whereas the three above referred to resemble more closely light-coloured varieties of the egg of *Sterna anglica*, but are less in size. In ground-colour they are light yellowish grey, somewhat sparingly marked with violet-grey shell-markings and brown or blackish brown surface-spots. In size they measure 44 by 34, 44 by 35, and 45 by 33 millims. respectively, whereas those I have received from elsewhere as being those of this species measure from  $38\frac{1}{2}$  by 30 to 42 by  $29\frac{1}{2}$  millims. I may remark that in 1875 the Roseate Tern reappeared at the same place, but did not breed there; and in 1876, when, in company with Dr. Heiberg, I visited the island, we did not see it."

Eggs of the Roseate Tern, in my own collection, obtained on the American coast, resemble those of the common Tern, both in size and general coloration; but one or two have the spots rather smaller and more clearly defined, and are rather more elongated in shape.

The specimens figured are an adult male, in full summer dress, and a young bird, both from Massachusetts.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Woods Hole, Massachusetts, July 4th, 1863. *b*, ♂ *ad.* Woods Hole, July 30th, 1870 (*Professor Spencer F. Baird*). *c*, *juv.* Woods Hole (*S. F. Baird*). *d*, ♂, *e*, ♀. Elizabeth Island, Mass., September 30th, 1871 (*Dr. Brewer*). *f*, ♂. Port Blair, S. Andamans, May 20th, 1873 (*R. G. Wardlaw-Ramsay*).

*E Mus. Howard Saunders.*

*a*, ♂ *ad.* Farn Island? (*Heysham*, from the Doubleday collection). *b*, *im.* British coast. *c*, *d*, *e*, *ad.* Algoa Bay, S. Africa. *f*, ♀. Port Blair, South Andamans, May 20th. *g*, ♀. Port Blair, South Andamans, June. *h*, ♂. Port Blair, South Andamans, with three eggs, June 1875 (*Capt. Wimberley*). *i*, ♂. Trincomalee, Ceylon, June 18th, 1875 (*V. Legge*). *j*, *k*, *l*, *m*, ♂, *n*, *o*, *p*, *q*, *r*, *s*, ♀. Massachusetts coast, June, July, and beginning of August (*Warren*).







J.G. Keulemans lith

M. J. Richardson del.

LITTLE TERN.  
STERNA MINUTA.

## STERNA MINUTA.

(LITTLE TERN.)

*Sterna minor*, Briss. Orn. vi. p. 206, pl. 19. fig. 2 (1760).*Sterna minuta*, Linn. Syst. Nat. i. p. 228 (1766).*Sterna metopoleucos*, S. G. Gmel. Nov. Comm. Petrop. xv. p. 475 (1770-1771).*La petite Hirondelle de Mer*, Buff. Hist. Nat. Ois. viii. p. 337 (1781).*Sternula minuta* (L.), Boie, Isis, 1822, p. 564.*Sternula fissipes*, C. L. Brehm, Vög. Deutschl. p. 790 (1831).*Sternula danica*, C. L. Brehm, op. cit. p. 791 (1831).*Sternula pomarina*, C. L. Brehm, op. cit. p. 791 (1831).*Sterna antarctica*, Forst. Descr. Anim. p. 107 (1844).

*Sterne naine*, French; *Rondine di mare minore*, Italian; *Zwerg-Meerschwalbe*, German;  
*Dwerg Zeezwaluw*, Dutch; *Dværgterne*, Danish; *Småtärna*, Swedish; *Kratchka malaya*,  
 Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 996; Werner, Atlas, *Palmipèdes*, pl. 11; Kjærb. Orn. Dan. taf. 40 B;  
 Naumann, Vög. Deutschl. taf. 254; Sundevall, Svensk. Fogl. pl. 48. fig. 5; Gould, B. of  
 Eur. pl. 420; id. B. of G. Brit. v. pl. 73; Schlegel, Vog. Nederl. pl. 358.

*Ad.* fronte, gulâ et corpore subtùs albis: striâ a basi rostri per oculos ductâ, pileo et nuchâ nigris: corpore et  
 alis suprâ, cum uropygio, pallidè cano-cæruleis, supracaudalibus et caudâ albis: remigibus primariis  
 tribus externis nigricantibus, in pogonio interno albo marginatis, rhachibus nigricantibus: remigibus  
 secundariis dorso concoloribus: rostro flavido, versus apicem nigro: iride fuscâ: pedibus rufescenti-  
 aurantiacis.

*Juv.* pileo pallidè fusco-cinereo, nigro notato, nuchâ et vittâ oculari nigris: corpore suprâ sordidè cano-cæruleo,  
 plumis nigro et albo marginatis: caudâ sicut in adulto sed brevior et versus apicem vix nigro-cinereo  
 notatâ: remigibus et corpore subtùs sicut in adulto picturatis.

*Adult in summer* (Pagham, Sussex, 28th May). Forehead white, a stripe from the base of the bill through  
 the eye, crown, and nape deep black; entire mantle, including the upper part of the rump, dark pearl-  
 grey or French grey; lower rump, upper tail-coverts, and tail pure white; first three quills with black  
 or blackish shafts and blackish in colour, broadly margined on the inner web nearly to the tip with  
 white; rest of the quills French grey; entire underparts pure white; bill yellow, tipped with black;  
 iris dark brown; legs bright orange. Total length about 10 inches, culmen 1.4, wing 6.75, tail 3.8,  
 tarsus 0.6, lateral rectrices extending 1.95 beyond the central ones.

*Adult in winter.* Does not materially differ from the summer dress; but the grey on the upper parts is rather  
 darker, and even the portions of the upper parts which in the summer are pure white have a faint tinge  
 of grey.

*Young* (Rye, Sussex, 18th September). Crown brownish grey marked with black, becoming black on the nape and on the mark through the eye; upper parts dull French grey, the feathers margined with blackish brown, outside of which is a narrow white margin; tail as in the adult, but shorter, and slightly marked with blackish grey at the tip; quills as in the adult; underparts pure white.

THE range of this, the least of our European Terns, is not so extensive as that of some of its allies: it is met with throughout Temperate Europe, occurring in winter on the coast of West Africa as far as the Cape of Good Hope; and it is also found in Western Asia.

In Great Britain it is found here and there on the coasts, breeding much more plentifully on the east side than elsewhere; and it is met with during the nesting-season in a few scattered localities from the south coast of England to the Orkneys. I used to see it not unfrequently in various parts of the south coast of England; and it is common in parts of the east coast. Mr. Cordeaux says that it nests annually at Spurn Point, but in greatly reduced numbers, and he has met with it in the summer near Skegness, where it is nearly extinct. It arrives at Spurn in May, and leaves in October. Mr. Robert Gray says that it is generally distributed on both the east and west coasts of Scotland, though not numerous in any one locality. Baikie and Heddle state that it is often observed on Sanday, one of the Orkney Islands; but Dr. Saxby does not record it from Shetland. In Ireland it is recorded by Thompson as a summer visitant, breeding on different parts of the coast.

I do not find any record of its occurrence in Norway beyond a note by Mr. Collett stating that two are said to have been shot by Mr. Siebke outside Jæderen in the autumn of 1864; but Nilsson says that it is not rare on the southern coasts of Sweden, being most frequently seen on the sand dunes near the coast, as, for instance, on Skanörs-ljung, at Lomma, Kullen, &c.; and it also occurs in Halland; but he did not observe it further north, and if it does occur in Bohuslän it must be very rare. Mr. Wallengren saw it on Gottland. So far as I can ascertain, it has not been obtained in Finland; but, according to Dr. Palmén, Mr. Falck states that he once saw this bird on the little lake of Pyhäjärvi. It does not occur far north in Russia; and I am informed by Mr. Sabanäeff that it is much rarer in Central Russia than the Black Tern, though it is more numerous in the Riazan and Tamboff Governments.

On the southern shores of the Baltic it breeds either in scattered colonies or occasionally in company with the common Tern, and nests also in suitable localities on the banks of some of the rivers; but Borggreve says that it seldom, if ever, occurs on the inland lakes. Gloger says that it is found on the Oder: it is common near Danzig. Baldamus records it from the Elbe, Von Negelein from the Weser; and it is found on the Rhine in the summer season. Kjærbölling says that it arrives in Denmark about the middle of May and leaves again late in July or early in August, and breeds in many places on the coast, as, for instance, Læsö, Rødsand, Hirtsholmen, Agersö, Muusholm, Saltholm, &c., and on the west coast, where it is most numerous. Mr. A. Benzon, of Copenhagen, also informs me that it is tolerably common on most parts of the Danish coast, and is numerous at Isefjord, on the north coast of Seeland, on the islands of the Cattegat, and along the west coast of Jutland. Baron von Droste-Hülshoff says that a few breed on the island of Borkum, but none on Rottum, and it is by no means a common species in East Friesland.

Degland and Gerbe say that it occurs regularly on passage on the northern coasts of France

in May and August, and is frequently seen on the Mardick canal near Dunkerque, and a few pairs breed near Calais and Boulogne. In the south of France it is not rare along the Rhône, and is also seen on the Loire. Mr. Lacroix states that it breeds regularly in Aude, Hérault, and the Pyrénées Orientales. Professor Barboza du Bocage speaks of it as being common in Portugal; and Colonel Irby says (Orn. Str. Gibr. p. 210-11) that "it is only a summer visitant around Gibraltar, and, keeping to the sea-coast, is the latest to arrive of all the family. They are nowhere very abundant; but a few nest near the mouth of the Guadiarro about the end of May, as well as in other localities on the coast." The earliest date on which he noticed one was the 10th of May, and the latest the 25th of October. Mr. Saunders also mentions that he observed this species at the mouth of the Ebro. It is found on the coasts of Italy, Sardinia, and Sicily during the summer season, and appears to be tolerably common.

According to Mr. C. A. Wright it is rare at Malta; Mr. Medlycott, he adds, shot one a few years ago; and he himself saw two in St. Paul's Bay in August 1855. It appears to be rather rare than otherwise in Southern Germany; but Messrs. Danford and Harvie-Brown state (Ibis, 1875, p. 431) that, though uncommon, it breeds in Transylvania, arriving in May and leaving in August. I never observed it on the Danube; but it is said to breed commonly on some parts of the coast of Turkey; and Dr. Krüper states that it is common in Greece, arriving somewhat late in the spring, and he found it breeding at Missolonghi late in April. Lord Lilford records it from Corfu, where, he says (Ibis, 1860, p. 356), it "occurs sparingly at the period of the vernal migration." In Southern Russia it is stated by Professor von Nordmann to be very numerous; and according to Dr. Krüper, it is very common on the coast of Asia Minor, and he found it breeding near Smyrna. Canon Tristram met with it on the small lagoons north of Beyrout; and it occurs also in North-east Africa. Captain Shelley states that it is a winter visitant to Egypt, and of rare occurrence, as he has only seen one specimen from that country; but Von Heuglin says that it is found at all seasons in Central and Lower Egypt, and he has received its eggs from the lagoons of the Delta, and an immature bird from Cairo. He believes that it breeds on the coasts of the Red Sea, as he obtained it in June and July between Qoseir and Massowah, where it was not rare. It appears to be wanting, or else very rare, in Nubia; but Mr. J. H. Gurney, jun., writes (Ramb. Nat. p. 233) that he thinks the present species of Tern "should be considered a summer visitor rather than a winter one. It would seem to be not nearly so rare as has been hitherto supposed. In the first part of May we several times saw small flocks, and obtained specimens. In particular a great many were seen between Bibba and Cairo. At the Faioum also it was rather a common bird, and one was seen carrying some building-materials. When we returned to Alexandria we saw them again there, on the 11th and 17th of June. I was also shown a skin at Damietta by M. Filliponi, who said that they were not rare there." On the west side of the continent it is common; for Loche states that it is numerous on the coasts of Algeria.

According to M. Favier (*fide* Colonel Irby, *l. c.*) this Tern "is seen near Tangier, passing in small flights along the coast and on the rivers and lakes. They arrive during May, and return in September, some, however, remaining in the country to breed. They all retire south for the winter." It is found on the west coast of Africa; for Mr. Sharpe states (Ibis, 1872, p. 74) that Mr. Ussher shot one on the Nagua river; Weiss also procured it on the Gold Coast; and, as

stated by Mr. Howard Saunders, there is a specimen in the British Museum from the Cape of Good Hope.

To the eastward, the present species ranges as far as India. It is found on the Caspian; Eichwald speaks of it as being common there; and De Filippi obtained it at Enzeli, and at Mianah on the Persian plateau. Dr. Severtzoff states that it breeds in Turkestan; and, according to Dr. Henderson, it is common and breeds in Yarkand. Dr. Jerdon writes (B. of India, ii. p. 841):—"This minute Tern is most abundant at the mouths of tidal rivers and backwaters on the Malabar coast, and is more rare apparently on the east coast. Inland I have only found it on the Ganges, in small parties. It nidificates in this country, on sandbanks in the Ganges, near Mirzapore, where it was found breeding by Mr. Brooks." Dr. Henderson says (Lahore to Yarkand, p. 303) that it is "common in Yarkand, where it is called 'Balakchi.' A young bird, apparently just fledged, was caught in the neighbourhood of the city of Yarkand on the 26th of August; so that the bird must breed there." How far to the east the present species ranges I am unable to state with any degree of certainty; but I have examined examples from the Irrawady valley, and from Tonghoo, in Burmah, and I observe that these specimens, though undoubtedly referable to the present species, have the shafts of the primaries lighter in colour than in European specimens. On the Chinese coast, in the Celebes, and, according to Mr. Saunders, also in Ceylon, the present species is replaced by an allied form, *Sterna sinensis*, Gmel. (Syst. Nat. i. p. 608, 1788), which differs in being somewhat larger and stouter, in having the lateral tail-feathers rather longer, and the shafts of the outer primaries white. This form is found also in Queensland and along the Australian coast.

Nor does *Sterna minuta* occur in America, being there replaced by *Sterna antillarum*, Less. (Descr. Mamm et Ois. p. 256, 1848), and *Sterna superciliaris*, Vieill. (Nouv. Dict. xxxii. p. 126, 1819). Mr. Howard Saunders, who (P. Z. S. 1876, pp. 661-663) carefully points out the distinctive characters between the species allied to *Sterna minuta*, says that *Sterna antillarum*, which ranges throughout temperate America, on both coasts down to the Antilles, Trinidad, lat. 10° N., differs from *Sterna minuta* in having the rump and upper tail-coverts pearl-grey and not white, and there is but little black at the tip of the bill. *Sterna superciliaris*, which, he says, "is found on all the large South-American rivers, from the Parana upwards, is plentiful on the Amazons and the Ucayali, and abundant on the river Huallaga still further west," resembles *Sterna antillarum*, but has the back, rump, and tail rather darker, the bill stouter and entirely yellow, and the legs and feet olivaceous. I need only add that, after a careful comparison of the specimens in Messrs. Salvin and Godman's collection, I can confirm the statements made by Mr. Saunders as to the distinctions between the above species.

On the wing the Little Tern is exceedingly graceful and buoyant, and in power of flight equals any one of its allies; and in its general habits it probably assimilates closer to the common Tern than any other species. When hovering over the surface of the water in search of food, its bill is pointed downward; and when it drops onto the water to seize a fish it not unfrequently immerses the entire body. I have frequently seen them hovering almost in the same place, only now and then altering their position somewhat, over a small pool, every now and again dropping, with upraised wings, onto the surface of the water, and rising almost immediately with a small fish. During the breeding-season this Tern does not range far from its breeding-haunts, but

contents itself with picking up what it can in the way of food on the neighbouring shores. Its note is a shrill, somewhat harsh call, resembling the syllables *kreek* or *kree*; and when many individuals are in the air overhead uttering this shrill creaking note (for they are by no means silent birds), it becomes a confused medley of sounds.

The food of this Tern consists chiefly of small fishes and aquatic insects and their larvæ. Naumann says that it will capture fish up to  $2\frac{1}{2}$  inches long, and that it is very partial to *Cyprinus alburnus*, *C. gobio*, and *Gasterosteus aculeatus*, besides feeding largely on the small fry of larger species of fish.

The eggs of *Sterna minuta*, usually three, but sometimes two in number, are deposited in a mere depression in the shingle or sand. They are greyish yellow or stone-ochre in colour, somewhat sparingly covered with violet-grey shell-markings and blackish brown surface-spots. These markings are usually scattered over the surface of the egg; but Mr. Benzon informs me that he possesses one which has a very distinct ring round the centre. Eggs in my collection vary in size from  $1\frac{6}{40}$  by  $\frac{35}{40}$  to  $1\frac{13}{40}$  by  $\frac{37}{40}$  inch, and vary considerably in shade of ground-colour, some being stone-grey and others warm deep clay-ochreous. Mr. Benzon gives the average size of those in his collection as  $32\cdot5$  by  $23\cdot5$  millimetres.

The specimens figured are the adult and the young bird above described, both of which are in my collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a, b, juv.* Rye, Sussex, September 18th, 1860 (*H. E. D.*). *c, ♂.* Pagham, Sussex, May 28th, 1867 (*H. E. D.*).  
*d, e, ♀, f, juv.* Pagham, July 30th, 1870 (*R. B. Sharpe*). *g, ♀.* Schleswig (*Schlüter*).

*E Mus. Lord Tweeddale.*

*a, ♂.* Zoulla, Abyssinia, June 9th, 1868 (*Jesse*). *b.* India (*Jerdon*). *c, ♀.* Irrawady, August 1874. *d.* Tonghoo, April 22nd, 1874 (*R. G. Wardlaw-Ramsay*).







J.C. Keulemans hth

ALLIED TERN.  
STERNA MEDIA.

Harbort imp

## STERNA MEDIA.

(ALLIED TERN.)

*Sterna media*, Horsf. Trans. Linn. Soc. xiii. p. 198 (1820).*Sterna affinis*, Cretzschm. in Rüpp. Atlas, p. 23, pl. 14 (1826, nec Horsf.).*Sterna bengalensis*, Less. Traité d'Orn. p. 621 (1831).*Thalasseus torresii*, Gould, Proc. Zool. Soc. 1842, p. 140.*Sterna arabica*, Ehrenb., fide Malherbe, Faun. Orn. Sic. p. 210 (1843).*Thalasseus mascuriensis*, Licht. Nomencl. Av. p. 98 (1854).*Thalasseus affinis* (Cretzsch.), C. L. Brehm, Vogelfang, p. 345 (1855).*Sterna velox*, Hartl. Orn. Beitr. Faun. Madag. p. 86 (1861, nec Rüpp.).*Thalasseus bengalensis* (Less.), Gould, Handb. B. Austr. ii. p. 397 (1865).*Actochelidon affinis* (Cretzsch.), G. R. Gray, Hand-l. of B. iii. p. 119. no. 11045 (1871).*Actochelidon maxuriensis*, Ehr., G. R. Gray, tom. cit. p. 119. no. 11046 (1871).*Actochelidon media* (Horsf.), G. R. Gray, tom. cit. p. 119. no. 11047 (1871).*Figuræ notabiles.*Rüpp. *l. c.*; Gould, B. of Austr. vii. pl. 25.

*Ad. ptil. æst.* pileo subcristato nigro: corpore et alis suprâ, cum uropygio toto, pulchrè cinereis, collo postico et dorso antico albis: caudâ cinereâ, rectrice extimâ utrinque fere omnino albâ: remigibus in pogonio externo griseo-canis, et in pogonio interno prope scapum nigricantibus, cæterum albis, scapis albis: capitis lateribus, collo et corpore toto subtus albis: rostro flavo: iride fuscâ: pedibus nigricantibus.

*Ad. ptil. hiem.* fronte griseâ, pileo albo nigro profusè guttato, nuchâ nigrâ: corpore reliquo sicut in ptilosi æstivali picturato.

*Adult in summer* (Alexandria). Entire crown to the base of the bill and nape deep black, the feathers on the nape elongated, neck and fore part of the back white; mantle ashy grey; rump and tail pearly ash-grey, the outer rectrix on each side white; quills hoary grey on the outer web, the inner web being blackish near the shaft and the tip, the rest of the inner web being white; but the blackish part covers a larger area on the inner quills than on the outer ones; chin, throat, and underparts white; bill greenish yellow; iris brown; legs and toes black; under surface of toes flesh-colour. Total length about 13·5 inches, culmen 2·5, wing 11·6, tail 6·3, outer rectrices extending 3 inches beyond the central ones, tarsus 1·05.

*Adult in winter.* Differs from the adult in summer in having the forehead dull hoary grey, the crown white closely spotted with black, the nape, however, being black.

*Young* (Madagascar). Resembles the adult in winter; but the wing-coverts are marked with sooty grey, the blackish grey on the quills covers a larger area, and the tail is tipped with blackish grey, the outer rectrices being much shorter than in the adult.

THIS Tern, which is only a rare straggler to Europe proper, is found all along the north coast of Africa, ranging down the Red Sea to Madagascar; and in Asia it is found on the coasts of India,

through the Malay archipelago to North Australia. According to Malherbe (*l. c.*) it is found throughout the Greek archipelago and in the Mediterranean, and one was killed near Syracuse; and Schlegel states that there is a specimen in breeding-plumage from Sicily in the Leyden Museum. Dr. Krüper, however, does not include it in his list of the birds of Greece; and it appears doubtful if it really has been obtained there. It certainly is found on the northern coasts of Africa. Mr. Howard Saunders informs me that he received an egg taken by one of the telegraph-constructors on the island of Benghazi, in the Gulf of Tunis; and Colonel Irby writes (*Orn. Str. Gibr. p. 209*):—"This Tern occurs in the Straits in spring. I obtained two, both males, shot near Tarifa, on the 20th April 1874, and have seen others from Tangier; most probably they breed somewhere on the coast." And he adds the following note from M. Favier, viz.:—"This species is one of the least common of the Terns near Tangier, and is only occasionally met with. Further south, in the vicinity of Larache, it is more frequently seen; and I found it there during September, October, and November, in company with *Sterna cantiaca*, which species it resembles in habits." Loche states that it is of accidental occurrence on the coast of Algeria. On the east side of the Mediterranean it is stated by Canon Tristram (*Ibis*, 1859, p. 38) to occur in Caiffa Bay, Palestine, but he did not obtain it; and in North-east Africa it is tolerably common. I received one from near Alexandria; and Von Heuglin speaks of it as being but a straggler to the lagoons of the Delta and the Mediterranean coast of Egypt; but, he adds, "it is a resident all along the Red Sea, except in the northern portions. It is scarcely to be called a resident on the Arabian coast, but is common on Dahlak and on the Gulf of Aden." It certainly breeds on the coast of Egypt; for Mr. Stafford Allen sent me three eggs taken there by himself with a specimen of the bird. According to Dr. Finsch it occurs along the east coast of Africa, and it has been recorded from Zanzibar. Mr. Edward Newton, on his second visit to Madagascar (*Ibis*, 1863, p. 460), found it very common at Tamatave, near the mouth of the Hivondrona river, at the beginning of September 1862. Two years later he announced it as a bird of Rodriguez (*Ibis*, 1865, p. 153), and subsequently met with it in the Seychelles (*Ibis*, 1867, p. 359).

In Asia it is numerous off the coasts of India, and ranges down to North Australia. Dr. Jerdon speaks of it as being more numerous than *Sterna bergii*, especially about the backwaters of Madras and the Malabar coast; and Mr. A. O. Hume says (*Stray Feathers*, i. p. 284) that "it is excessively abundant in the Kurrachee harbour and in all suitable bays and backwaters, from the mouths of the Indus, at any rate to Gwader on the Mekran coast; while the *Sterna bergii* is met with only singly, the present species and *Sterna cantiaca* herd together in vast flocks; and though these too may be met with singly, whilst feeding, morning and evening, at midday they are always seen congregating in such masses that a single shot (and they have apparently no fear of men or guns) secures a dozen specimens." In his notes on the avifauna of the Laccadives, Mr. Hume also remarks that he saw a large flock at Pere-Mull-Par, and a few individuals at Cherbaniani, but did not meet it elsewhere; and he further states (*Stray Feathers*, ii. p. 318) that he received three specimens from Mr. Davison, who procured them on the north coast of Camorta. Mr. Holdsworth says that a Tern, apparently this species, is very common in Ceylon. Blyth records it from the Nicobars; there are examples in the Leyden Museum from Ceylon, Sumatra, Java, Macassar, and Northern Celebes; and Mr. Gould received it from Port

Essington, in Australia, through Gilbert, who informed him that it was numerous on all the sandy points in the harbour, as well as all round the coast and the neighbouring islands, and was believed to breed on the sandy islands.

In habits this Tern is said to resemble the Sandwich Tern more than any other. The best account I find both of its breeding and general habits is that by Von Heuglin (Orn. N.O.-Afr. pp. 1432, 1433), which I translate as follows:—"This Tern is very gregarious, and so soon as the young are fledged they often collect together in flocks of several hundred individuals. It is found along the coasts of the mainland, as well as on coral reefs and sand islands, and less frequently in narrow bays and harbours. Like all the Terns it is conspicuous by its graceful, light, and continued flight; and it propels itself even during stormy weather with the greatest ease, and without apparent exertion. In wet weather and when the sea runs high one sees flocks following the larger fishes and cetaceans. Some are to be seen pouncing down on small fishes, while some seem to settle down on the backs of the larger fishes, and others swim about in search of food. They dive both from the wing and from the surface of the water. They are fond of keeping about the surf; and it is a curious sight to see several large flocks crossing each other in the shallows where the young fish are: dozens of them stop suddenly in their flight, hover for a moment or two, and then dart down suddenly into the surf. It is a continuous darting down, rising again, and shaking-off of water, the birds appearing to vie with each other in agility and perseverance. During the hot portion of the day they collect in flocks on the sandy promontories to rest and digest their food; and some recline in the sand, whilst others stand about, all having their heads to windward.

"In the southern portions of the Red Sea the breeding-season is from June to August. We visited several breeding-places on the Amarat Island and in the Dahlak archipelago. They prefer low sandy places covered with madrepore-remains not far from the shore, where the vegetation is sparse and consists merely of soda-plants; and the nests are placed close together. These are only a depression in the ground; and the eggs, usually two in number, are oval, 20 to 24 lines long by  $14\frac{1}{2}$  to 16 in diameter, and are white, tinged with clay-yellow, pale greenish, or red, the shell being coarse and dull, without any gloss; and the markings consist of irregular ashy blue, rusty brown, or dark brown spots and blotches, which are usually more numerous at the larger end.

"The birds incubate less during the day time than during the cool of the evening and night. They defend their nests with the greatest fearlessness, and strike at any intruder with the greatest fury, uttering loud cries, but evade a blow with ease. When their nests are robbed they follow whoever has taken the eggs for a considerable distance."

Three eggs in my collection, sent to me from Egypt by the late Mr. Stafford Allen, are in general character much like those of the Sandwich Tern. Two are marked on a warm whitish ground with purplish grey shell-markings and dark brown surface-spots; and the third is much more boldly blotched with dark reddish brown on a clay yellowish-white ground, the purplish grey shell-spots being rather fewer than in the other two eggs. In size they average about  $2\frac{7}{10}$  by  $1\frac{2}{10}$  inch.

The specimen figured is an adult male in full breeding-dress from Alexandria, for which I am indebted to the late Mr. S. Stafford Allen.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀ *ad.* Egypt, summer (*Hemprich & Ehrenberg*). *c.* Egypt, winter (*Hempr. & Ehr.*). *d*, ♂ *ad.* Alexandria. *e.* Madagascar (*Cutter*).

*E Mus. C. A. Wright.*

*a, ad.* Spring plumage, near Benghazi, North Africa.





M & N Hanhart imp

CASPIAN TERN.  
STERNA CASPIA.

J G Keulemans lith.

## STERNA CASPIA.

(CASPIAN TERN.)

- Sterna caspia*, Pall. Nov. Comm. Petrop. xiv. p. 582 (1769).  
*Sterna tschegrava*, Lepechin, Nov. Comm. Petrop. xiv. p. 500 (1769).  
*Sterna caspica*, Sparrm. Mus. Carls. ii. fasc. 3. no. 62 (1788).  
*Sterna megarhynchos*, Meyer, Taschenb. deutsch. Vogelk. ii. p. 457 (1810).  
*Thalasseus caspia* (Pall.), Boie, Isis, 1822, p. 563.  
*Hydroprogne*, Kaup (*Sterna caspia*, Pall.), Natürl. Syst. p. 91 (1829).  
*Sylochelidon balthica*, C. L. Brehm, Vög. Deutschl. p. 769 (1831).  
*Sylochelidon schillingii*, C. L. Brehm, op. cit. p. 770 (1831).  
*Sylochelidon caspia* (Pall.), C. L. Brehm, op. cit. p. 770 (1831).  
*Helopus caspius* (Pall.), Wagler, Isis, 1832, p. 1224.  
*Thalassites melanotis*, Swains. B. of W. Afr. ii. p. 253 (1837).  
*Sylochelidon strenuus*, Gould, P. Z. S. 1846, p. 21.  
*Sylochelidon melanotis* (Sw.), Bp. Compt. Rend. 1856, p. 772.  
*Sterna melanotis* (Sw.), Hartl. Orn. West-Afr. p. 254 (1857).  
*Sterna major*, Ellman, Zool. 1861, p. 7472.

*Rondine di mare maggiore*, Italian; *Abou-Belaha*, Arabic; *Raub-Meerschwalbe*, German; *Reus Zeezwaluw*, Dutch; *Rov-Terne*, *Skraalterne*, Danish; *Skräntärna*, Swedish; *Raukultura*, Finnish; *Kraschka tschegrava*, Russian.

*Figuræ notabiles.*

Werner, Atlas, *Palmipèdes*, pl. 1; Kjærb. Orn. Dan. taf. 40 a; Naumann, Vög. Deutschl. taf. 248; Sundevall, Svensk. Fogl. pl. 48. fig. 1; Gould, B. of Eur. pl. 414; id. B. of Australia, pt. vii. pl. 22; Schlegel, Vog. Nederl. pl. 360.

*Ad. ptil. æst.* pileo et nuchâ nitidè nigris nuchæ plumis elongatis: dorso et alis suprâ pallidè cæruleo-canis: corpore suprâ reliquo et corpore subtùs albis: remigibus saturatè cincreis, in pogonio interno saturationibus et versus apicem nigricantibus: rostro corallino-rubro, versus apicem nigricante: iride saturatè fuscâ: pedibus nigris.

*Ptil. hiem.* corpore suprâ vix saturatione, pileo et nuchâ haud nigris, sed fronte albâ, pileo et capitis lateribus albis nigro striatis, rostro pallidiore et flavido-rubro nec corallino.

*Adult Male in summer* (Dobrudscha, 2nd August). Crown to just below the eye and nape glossy black, the nuchal feathers elongated; mantle pearl-grey or French grey; rest of the upper parts and tail white; quills hoary grey, darker grey on the inner web, and blackish on the terminal portion: underparts pure white; bill bright coral-red, blackish at the tip; iris dark brown; legs black. Total length about 19 inches, culmen 2·9, wing 15·5, tail 6·0, tarsus 1·8, outer rectrices 1·3 longer than the central ones.

*Adult Female* (Dobrukscha). Undistinguishable from the male in plumage, but, if any thing, a trifle less in size.

*Adult in winter* (Albania, November). Differs from the summer plumage in having the mantle rather darker; and the black cap is wanting, the forehead being white, and the rest of the crown and sides of the head white, closely striped with black, the markings being collected before the eye in a blackish patch, and on the cheeks and ear-coverts in one intermixed with greyish; bill lighter and yellower than in the summer, and more black at the tip.

*Young* (*fide* Naumann). Crown and nape white, closely striped with black, and slightly marked with brownish white on the forehead, sides of the head, and nape; upper parts light French grey, the feathers edged with yellowish white, and barred with a zigzag cross bar; rest of the plumage as in the adult; bill reddish yellow, towards the tip blackish brown.

RANGING from Northern Finland down to South Africa, and frequenting the coasts of Asia and the islands down to New Zealand, the Caspian Tern is also found in the Nearctic Region from the shores of Labrador down to New Jersey, and has, therefore, a very extensive range. It does not, like many of its allies, breed in northern latitudes, and pass southward for the winter, but it has been found nesting from the top of the Gulf of Bothnia down to New Zealand.

With us in Great Britain it is only known as a rare straggler on the east and south coasts of England, and it has not been recorded from Scotland or Ireland. Yarrell mentions the following occurrences, viz.:—one near Yarmouth, October 1825; one, Caister; three or four seen at Aldborough, in Suffolk, and one shot; one, Norfolk, 1839; one, Norfolk (Breydon Harbour), June 1849; one, Norfolk, August 1851; one, Lincolnshire, 1853. To these Mr. J. E. Harting adds (*Handb. Brit. B.* p. 167) the following, viz.:—one, Breydon Harbour, Yarmouth, June 1850, and one from the same locality, July 16th, 1850; one, Yarmouth, May 1862; and one, Christchurch, Hants. Mr. Mansel-Pleydell also states (*Orn. & Conch. Dors.* p. 52) that two were shot in Weymouth backwater, in the autumn of 1848, by a man named Gillingham, and one was killed in the Wareham river in July 1872.

It is not known with certainty to have occurred in Norway, the only record I can find being that given by Mr. Collett, who says that a single specimen was seen in the Hvalöer by Mr. Schübeler, a parish priest, in August 1839. On the Swedish coast it is met with from Torneå down to Bohuslän, and is found in the latter parts from the end of May to the end of August, but is not common. Nilsson says that, according to Lundborg, a pair or two breed in the outer islands off Ostgöthland; and Wallengren states that it nests on the Carlsöer and outside Slitö Harbour. On the Finnish side it is found from Torneå downwards, but nowhere common. I found it breeding off Uleåborg, and saw several pairs on the islands near that town; and Dr. Palmén says (*Finl. Fogl.* ii. p. 567) that a few pairs breed annually off Helsingfors, and it has been seen at Sundö, off Borgå. It also occurs in the Kyrkslätt and Esbo parishes. On the south-western portion of the coast it is seldom found beyond Skiftet; but a few pairs breed on Åland and Klafskär. It does not appear to have been met with on the northern coasts of Russia, but is occasionally found on the shores of the Baltic provinces; and Borggreve says that it has become very rare on the coast of Prussia, and it is very rarely met with in the interior of Germany. It is, however, more frequently found in Denmark; and there, according to Kjærbölling,

"it is most numerous on Sylt, where, in Boie's time, the colony consisted of about two hundred pairs. In August and September the old birds from there visit the south-western shores of the Ringkjöbing fjord and the Fiil lake. Faber found it in July 1824, breeding on Veierö, and in 1827 on the Nordrerönnar, at Læsö; Mechlenburg obtained it from the Flensburg fjord, Bölling from Ribe; Melchior met with old and young birds on Eenö, near Gaunö, in Seeland." It is, however, rapidly decreasing in numbers; for when Naumann visited the island of Sylt in 1819 the colony consisted of about three hundred pairs; when Boie subsequently was there it had dwindled to two hundred pairs; and Dr. Möbius, who was there in 1871, reported that at the old breeding-place on the north-eastern frontier of the island there remained but seventeen pairs: but, as below stated, when Mr. Durnford visited Sylt in 1874 he found about twenty-five pairs breeding there. On the southern shores of the German Ocean the Caspian Tern becomes rarer; and Professor Schlegel says that it has only been met with on a few occasions on the Dutch coast, the last four having been seen on the 21st June, 1847, near Leiden. On the Belgian and French coasts it is occasionally met with; and Messrs. Degland and Gerbe say that on the 19th January, 1827, after a storm two were found, dying, in the fields near Douai, since when several have been killed near Dunkerque and Tournai; and it occurs sometimes on the coasts of the south of France. M. Lacroix says that it occurs rarely on the coasts of Aude and Hérault, and has been met with near Cette. It is included in Professor Barboza du Bocage's list of the birds of Portugal with a query; and Colonel Irby says that he did not meet with it on the coast of Spain, and that it is only an accidental straggler there. Mr. Saunders informs me that "it is occasionally obtained at the mouth of the Guadalquivir;" and although Colonel Irby did not notice it there, I have seen both specimens and eggs from that locality; it also breeds on the islands of the Mar Menor, to the north of Cartagena, where Mr. Crotch observed it. On the coasts of Italy it is rare, and only of irregular occurrence; and on those of Sicily its appearances seem to be few and far between; but Cantraine found it breeding on the desert islands near Sardinia, and it visits the coasts of that island (especially the part near the Straits of Bonifacio) regularly in April and May.

A single instance of its occurrence in Malta is recorded by Mr. C. A. Wright, who says that he obtained an adult female on Fort-Manoel Island on the 21st of May 1869. Lord Lilford met with it on the coast of Albania; and Dr. Krüper says that he often observed it in the winter in the lagoons of Missolonghi, where, however, it does not breed; but he saw one pair on the islands near Smyrna. Colonel Drummond-Hay met with it in April near Butrinto; Von Pelzeln says that one was obtained at Seefeld, in Austria, previous to 1822; but I find no other record of its occurrence in Southern Germany, though it is met with on the coast of Turkey, and breeds in the marshes of the Dobrudscha. In the Black Sea it is, Professor Nordmann says, much less common than on the Caspian; and he mentions that he shot one near Sebastopol in March 1836.

As above stated, Dr. Krüper observed it near Smyrna; and Lord Lilford writes to me that he saw two Caspian Terns close to the town of Limasol, in Cyprus, on the 7th May, 1875, and adds that this was the only occasion on which he met with this Tern during his latter Mediterranean voyages, though it was not very uncommon on the coast of Epirus during the winters of 1856-57 and 1857-58. Canon Tristram met with it in Palestine, and says that he saw several

fishing close to the shore at Jaffa. In North-east Africa it is not uncommon. Mr. E. Cavendish Taylor observed it at Port Said and Damietta; Captain Shelley records it from Lower Egypt; and Von Heuglin says that it is a resident in Lower Egypt and along the coasts of the Red Sea southwards to about the Gulf of Aden, where, in the late autumn and winter, it is numerous. Along the Nile, in Central and Upper Egypt, Nubia, on the Blue and Lower White Nile, and in the swamps of Kordofan it is more of a winter visitant. It is stated by Loche and Malherbe to occur rarely in Algeria; Favier says that it is very rare near Tangier, and he only obtained a single specimen in February 1844; and Colonel Irby supplements this by another occurrence in the winter of 1869. It is found on the west coast of Africa, and has been recorded from Sierra Leone, the Gaboon, and Gambia. Mr. Andersson says (B. of Damara L. p. 359) it is not uncommon in Walwich Bay and on the south-west coast generally; and Mr. E. L. Layard speaks of it (B. of S. Afr. p. 369) as being a periodical visitant to the Cape of Good Hope, appearing chiefly in summer; but his son saw a pair on the 17th May, 1865. It has been met with in Algoa Bay, Mozambique, and Madagascar; and Dr. Kirk, who met with it on the Zambesi, writes (Ibis, 1864, p. 337) as follows:—"In the month of January these birds were found breeding in company with the following species (*Sterna velox*) on the low sand islands off the mouth of the Zambesi. There were commonly two or three eggs in each nest."

In Asia the present species is found as far east as China. It is said to be common on the Caspian Sea; and Dr. Severtzoff states that it breeds in Turkestan. Mr. Blanford says (E. Pers. ii. p. 293) that it is not common on the Baluchistan coast, though both he and Mr. Hume obtained specimens. It is more abundant on the Caspian, where, according to Eichwald, it breeds. Ménériés says that it is very common at Lenkorán in June. To this Major St. John adds that it is very common on the Shiraz and Kázhún plains in winter. Mr. A. O. Hume writes (Stray Feathers, i. p. 280) as follows:—"The Caspian Tern, which is almost unknown in the North-western Provinces, Oudh, the Punjab, Rajpootana, is occasionally seen in the Indus after that river enters Sindh, and is very common in all the larger lakes of the latter province. In the Muncher lake I have counted more than fifty on the wing at the same time, each bird flying separately on his own responsibility, and never, so far as I have noticed, associated in flocks or parties, as is so often the case with the other Terns and Gulls. In the Kurrachee harbour they were not uncommon; and I obtained specimens in more than one locality along the Mekran coast, and saw several at Muscat." According to Dr. Jerdon (B. of India, ii. p. 835) it is "by no means uncommon in most parts of India, frequenting rivers, jheels, and tanks. It is generally seen alone or in pairs, rarely a few together; and it feeds chiefly on fish and prawns. It does not appear to breed in this country." Mr. Holdsworth states that it is seen at all seasons on the coast of Ceylon, invariably in pairs, flying along the shore just outside the line of beach.

Dr. G. Radde says that about thirty versts from the mouth of the Dseja he met with a considerable number of these Terns, but did not observe it elsewhere in Siberia. Mr. Swinhoe met with it on the coast of China, and says that a few visit the coast of Formosa in winter after severe north-east winds. He also found it plentiful about the harbour of Hochow in February and the beginning of April. From here it is found down southward to Australia and New Zealand. I do not find it recorded from the Philippine Islands; but, according to Mr. Buller (B. of N. Zeal. p. 280) it is found all round the coasts of New Zealand, and breeds there; and

Mr. Gould says (Handb. B. Austr. ii. p. 392) that it frequents all the shores of Australia, but is, perhaps, more numerous on the islands in Bass's Straits and Tasmania than elsewhere. On the American continent the present species is stated to be rather rare than otherwise. It is recorded from the Mackenzie river by Bernard Ross; and, according to Professor Baird, it is met with on the coasts of the United States in winter as far south as New Jersey.

This, the largest and most powerful of our European Terns, is almost essentially a frequenter of the sea, seldom occurring inland or on smaller sheets of water; and it is said to wander less than its allies, being seldom found far from its nest during the breeding-season. Where I have met with it, on the coasts of Sweden and Finland, it is rather scarce than otherwise, and is found during the breeding-season in single pairs, appearing unsociable in its habits; but in places where it is common it collects together in large numbers and breeds in colonies. When sitting, the large bill gives it a somewhat ungainly appearance; but on the wing it is graceful and active in its movements, more so than the Gulls, though slower and not so buoyant as most of the other species of Terns. It is powerful and bold, and is strong enough to protect its eggs and young from any of the Gulls; but at the same time it is said to take toll, like these, amongst its weaker feathered brethren, and to now and again catch and devour a young bird, or steal an egg or two. It swims more than the other Terns, but is not a very good swimmer. It feeds chiefly on fish, which it catches as they are swimming close to the surface of the water, pouncing down on them after hovering for a moment in the air; but it is said never to immerse itself below the surface when plunging down after its prey, but merely dips its head in the water. When caught the fish is swallowed whole, head first; and digestion is very rapid, so that before it has been long in the stomach it is reduced, all except the bones, to a sort of thin pulp. When flying about in search of food its cry is frequently uttered. This cry is loud, and very harsh, not unlike the note of the common Heron, and resembles the syllables *craak craa* uttered deeply. Should its breeding-haunts be invaded, it evinces the greatest alarm and anxiety, and will dash close round the intruder, uttering loud cries; and Naumann remarks that should there be eggs in the nest the male bird is the most anxious and bold, whereas if the young are hatched the female is the one which evinces the most anxiety, and adds that this is the case with most of the sea-birds. It breeds either singly or in colonies; and in the latter case they probably congregate for the purpose of defence against the Gulls and other birds which make a practice of stealing eggs and young birds. The nests which I have seen were merely a depression in the sand not far from the water, sometimes without any lining, and at others with a few grass-bents inside the nest-depression. Mr. Durnford, who visited Sylt in 1874, writes (*Ibis*, 1874, p. 401) as follows:—"On the 3rd June we walked from List, the most northern village in Sylt, to the nesting-place of this species on the north-west coast of the island, halfway between the two lighthouses. There were two small colonies, some hundred and fifty yards apart, one consisting of about ten and the other of about fifteen pairs of birds. They lay their eggs on the bare sand, between the beach and the dunes, in a slight hollow about the size of an Oyster-catcher's nest, occasionally lining it with a few pieces of shell. No nest (and we saw about a dozen) contained more than two eggs, which is not to be wondered at, as they are robbed by boys from List on every possible occasion. There were about ten eggs on the ground, two nests with two each, others containing a single egg apiece, and a few empty." As a rule, the number of eggs is three,

though often two are deposited; and they are laid late in May or early in June. As may be supposed, the eggs of this Tern are very large, those in my collection from Sylt and the Finland coast varying in size from  $2\frac{12}{40}$  by  $1\frac{27}{40}$  to  $2\frac{24}{40}$  by  $1\frac{33}{40}$  inch. In ground-colour they vary from stone-grey to warm stone-buff with a greenish tinge, and are marked with purplish grey shell-blotches and blackish brown surface-spots and blotches; some of these latter are very peculiar in shape, almost as if drawn with a pen; and, as a rule, they are generally distributed over the surface of the shell. The most abnormal egg and the lightest in shade of ground-colour is one I myself took near Uleåborg, in Finland, and shot the old bird as she rose from her egg.

The specimens figured are the adult examples in summer and winter dress above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♀ *ad.* Island of Rügen. *b*. Swedish coast (*Meves*). *c*, ♂. Dobrudscha, August 2nd. *d*, ♂. Dobrudscha, August 26th. *e*, ♂. Dobrudscha, September 5th, 1873. *f*. Gulf of Arta, Albania, 1871 (*Hanbury-Barclay*).

*E Mus. Howard Saunders.*

*a*, *b*, *ad.* St. Lawrence, N. America. *c*, ♀. Tamak, Crimea, July 23rd (*Schmidt*). *d*. Kurrachee, winter (*W. B. Muloch*). *e*, ♂. Muncher lake, Sindh, February 3rd, 1875 (*W. T. Blanford*). *f*. Amoy, February 1867 (*R. Swinhoe*). *g*, *h*, *i*, *j*. Otago, New Zealand (*Captain Hutton*).





M. N. Lehardt imp

CULBILLED TERN  
STERNA ANGLICA.

J. P. M. 1841

## STERNA ANGLICA.

(GULL-BILLED TERN.)

*Sterna anglica*, Mont. Orn. Dict. Suppl. (1813).*Sterna aranea*, Wils. Am. Orn. viii. p. 143, pl. 72. fig. 6 (1814).*Sterna affinis*, Horsf. Linn. Trans. xiii. p. 199 (1822).*Sterna risoria*, C. L. Brehm, Beitr. zur Vogelk. iii. p. 650 (1822).*Thalasseus anglica* (Mont.), Boie, Isis, 1822, p. 563.*Viralva anglica* (Mont.), Steph. in Shaw's Gen. Zool. xiii. i. p. 174 (1825).*Viralva affinis* (Horsf.), Steph. tom. cit. p. 175 (1825).*Gelochelidon balthica*, C. L. Brehm, Vög. Deutschl. p. 772 (1831).*Gelochelidon agraria*, C. L. Brehm, op. cit. p. 773 (1831).*Gelochelidon meridionalis*, C. L. Brehm, op. cit. p. 774 (1831).*Gelochelidon aranea* (Wils.), C. L. Brehm, op. cit. p. 775 (1831).*Laropsis anglica* (Mont.), Wagl. Isis, 1832, p. 1225.*Sterna macrotarsa*, Gould, Proc. Zool. Soc. 1837, p. 26.*Viralva aranea* (Wils.), Gould, Voy. Beagl. iii. p. 145 (1841).*Gelochelidon palustris*, Macgill. Man. Brit. B. ii. p. 237 (1842).*Gelochelidon anglica* (Mont.), Coues, Proc. Ac. Nat. Sc. Phil. 1862, p. 536.*Gelochelidon macrotarsa*, Gould, Handb. B. Austr. ii. p. 403 (1865).*Gelochelidon nilotica*, G. R. Gray, Hand-l. of B. iii. p. 119 (1871).*Sterne-hansel*, French; *Lachmeerschwalbe*, German; *Lach-Zeezwaluw*, Dutch; *Sand-Tar*, *Engelsk Terne*, Danish.*Figuræ notabiles.*

Werner, Atlas, *Palmipèdes*, pl. 6; Kjærbo. Orn. Dan. taf. 40 a; Naumann, Vög. Deutschl. taf. 249; Gould, B. of Eur. pl. 416; id. B. of G. Brit. v. pl. 74; Schlegel, Vog. Nederl. pl. 360; Audub. B. of Am. pl. 430; Wilson, Am. Orn. pl. 72. fig. 6.

*Ad. ptil. æst.* pileo et nuchâ nitide nigris: corpore, alis et caudâ suprâ pallidè margaritaceo-cinereis: remigibus extûs saturatè griseis, versus apicem et in pogonio interno nigricanti-griseis, centraliter pallidiore: gulâ, gutture, colli lateribus et corpore subtûs albis: rostro et pedibus nigris: iride fuscâ.

*Ad. ptil. hiem.* pileo haud nigro, sed fronte albâ, nuchâ griseo-albâ nigro striatâ, loris nigro notatis et striâ indistinctè albâ pone oculum: corpore suprâ et subtûs sicut in ptilosi æstivali colorato.

*Adult in summer* (Turkey). Crown and nape deep glossy black, leaving a line of white along the upper edge of the gape; chin, throat, sides of the neck, and entire underparts pure white; upper surface of the body, closed wings, and tail pale bluish pearl-grey; quills externally hoary grey, towards the tip and internally blackish grey, lighter in the centre; bill and legs black; iris brown. Total length about 13 inches, culmen 1.6, wing 11.65, tail 5.0, tarsus 1.2, lateral rectrices 1.6 longer than the central ones.

*Adult in winter* (Amoy). Differs from the adult in summer dress in lacking the black cap, the forehead being white, the nape greyish white striped with black; space before the eye marked with black, and a dull blackish stripe behind the eye; rest of the plumage as in summer.

*Adult Female*. Resembles the male, but is a trifle less in size.

*Young in down* (*vide* Naumann). Head greyish white on the hind crown, and nape marked with a few small blackish grey spots; a larger spot on the ear and a mark carried from the end of the gape under the cheek, both blackish grey; upper parts light grey, darker in shade than the nape and hind crown, marked with blackish grey spots, which run into stripes, of which the four central ones are the most clearly defined; chin, throat, and underparts pure white, except the fore part of the neck, which is greyish white; bill short, pale reddish at the base, greyish in the middle, and white at the tip; iris brownish grey; feet dull reddish white.

THE range of this Tern extends throughout Southern Europe (for it occurs in North Europe only as a straggler) and North Africa, eastward to Southern Siberia and the China seas down to Australia; and on the American continent it ranges from the United States down to Patagonia on the east side, but on the west side it has only been recorded from Guatemala.

In Great Britain it is a rare straggler, and has only been met with in England, and not in Scotland or Ireland. It was first described by Colonel Montagu from a specimen obtained in Sussex; and besides this, Yarrell records the occurrence of one near Leeds, and of another in Kent in June 1839. One is in the Bury-St.-Edmunds Museum, which was obtained in Breydon Harbour, Yarmouth, on the 14th April 1849; and a Norfolk-killed example is in the Wisbeach Museum. Two are recorded by Mr. Gurney as having been obtained at Yarmouth—one on the 24th May 1850, and one in July 1851; and two are stated by Mr. Knox (*Orn. Rambl.* in *Sussex*, p. 253) to have been obtained in Sussex—one at Rye Harbour, and the other at Selsea. The Rev. M. A. Mathew records two as having been procured at Barnstaple in the autumn of 1859, and Mr. J. Gatcombe one from near Plymouth in the autumn of 1866; and, according to Baron von Hügel, one was killed near Christchurch, Hants, on the 14th May 1872.

It is not found in Norway, Sweden, or Finland; and I have no record of its occurrence in Northern or Central Russia, or in the Baltic provinces; but Borggreve says that it is only a rare visitant to the coasts of North Germany; and, according to Naumann, it is stated to have formerly bred on the island of Lips, in the Baltic. Boeck obtained it from the German Ocean; and it has occurred once in Münsterland.

Mr. J. Collin says (*Skand. Fugl.* p. 587) that "the first who recorded it as occurring in Denmark was Mr. Teilmann, who shot a pair in South-western Jutland in June 1819. It breeds in several parts of the country, but appears to have been formerly more numerous than at present is the case. It used to breed numerously on Hostrup Sö, near Aabenraa, and is also stated to have bred on Mols. Some years ago Mecklenburg found at least thirty pairs breeding at Klipleve, and obtained both adult and young birds in various stages of plumage; and reliable people say that the colony used to be much larger. I have shot several on Felsöen and Ringkjöbing Fjord in August. According to Dr. Heiberg a small colony breed on the island in Sperring Sö (Thy), and a pair or two bred in the Flade Sö, at Agger, in 1874, and formerly it used to breed much more numerously in the former place, as also on the Sjörring Sö. Grell

found four pairs breeding on Knopen, near Tunö, on the 6th July 1876; and on the 14th June, 1859, Mr. Carstensen, of Thisted, sent one Sandwich Tern and three Gull-billed Terns alive to the University Museum, all four of which were taken on the Ægholmene, in the Sjörring Sö. On the 12th August, 1838, Mr. Serene d'Aqueria shot one in Lösning-Mose, about two miles (Danish) west of Horsens, and sent it to the Museum. According to Grell it breeds on the Bosserne, at Samsö; and Fencker shot a pair in Asferg Mose, near Randers, on the 2nd July 1871, out of a flock of fourteen individuals." It is a somewhat rare straggler to the shores of the North Sea. Professor Schlegel says that it is occasionally seen in Holland; and Baron De Selys Longchamps speaks of it as being an accidental visitant to the Scheldt, but adds that many have been killed in Flanders and at Tournay. In France it is met with accidentally on passage in the northern departments, but in the south it appears every spring about the mouths of the Rhône and in the marshes of Hyères. It is said to be found in Portugal, and occurs in Spain. Colonel Irby says that he never noticed it about Gibraltar, but it occurs in the marshes of the Guadalquivir towards San Lucar, and doubtless breeds there. Mr. A. von Homeyer records it from the Balearic Islands, where, he says, it is rare, and he is unaware if it breeds there; he only observed it singly, on three occasions. In Italy, according to Salvadori, it is very rare, and has been principally observed in the spring in Venetia, Liguria, Tuscany, and the Romagna. In Sardinia it appears to be more abundant, and is not uncommon in the southern portions of Sicily, especially about Catania, Syracuse, and Girgenti, but is rarer in the north, and only one instance of its occurrence is recorded from Palermo. Mr. C. A. Wright includes it in his List of Birds observed in Malta and Gozo, and says that three adult birds in breeding-dress were killed there in May 1864.

Dr. Krüper says that it arrives in Greece and Asia Minor in April, and at once proceeds to its breeding-places, which are on the lagoons of Missolonghi and Smyrna. In 1859 he obtained in Acarnania twenty-six eggs on the 29th April, whereas the specimens in the Museum were obtained in Attica when on passage, on the 15th April, 1861, and the 28th April, 1864. In 1874 he saw flocks of these Terns on the Phaleros. As its eggs are often destroyed, and it then breeds again, fresh eggs are not unfrequently found late in May and in June. Lord Lilford records it (Ibis, 1860, p. 356) as being not uncommon at Butrinto in January, February, and March; and he heard of it breeding at Livitazza. The Ritter von Tschusi-Schmidhofen informs me that it has several times been observed near the Neusiedler lake, in Hungary; and there are specimens in the Vienna Museum in summer, autumn, and winter dress. There are two specimens obtained in Galicia, one in the Cracow Museum, and one in the collection of Count Dzieduszycki, in Lemberg. According to Leu it is not uncommon, and breeds, in Bavaria, near Augsburg; and Von Tschusi has obtained eggs from him. Messrs. Danford and Harvie-Brown record it from Transylvania. It is also found in Turkey; and Professor von Nordmann records its occurrence on the margins of the inland lakes and rivers of Bessarabia. As above stated, Dr. Krüper met with it in Asia Minor; and Canon Tristram observed it in the small lagoons north of Beyrout.

Captain Shelley says that he found it most plentiful in Lower Egypt and the Fayoom, and frequently met with it as far up the Nile as Sioot; and Von Heuglin states that it is a resident, and breeds in the lagoons of Lower Egypt, and is by no means rare on the Nile, where it ranges

southwards to the Blue and White Nile, Sobat, and Bahr-el-Ghazál, and the swamps and steppes of Kordofan. In the southern districts it is, he says, a migrant, occurring from August to March and April. On the shores of the Red Sea he only observed it in the winter around Suez, and in August near Massowa—and in Abyssinia in March, on the Tana lake. In North-west Africa it is also common. Loche says that it is found numerously on the lakes and coasts of Algeria, and breeds at Lake Fezzara and elsewhere; and Canon Tristram writes of it (*Ibis*, 1860, p. 82), "Occurs in flocks both in the Western and Eastern Sahara. Several were shot at Bou-Guizoun and near Aïn el Ibel, on the El-Aghouat route; and vast flocks were met with round the Zahrez, in the same country. We found it also breeding at Zana the following spring." Favier does not mention its occurrence in Tangier; but Colonel Irby (*Orn. Str. Gibr.* p. 208) says that he found it in great numbers about the lakes of Ras Dowra towards the end of April, and he was informed by the Arabs that it remained there to breed. It is somewhat remarkable that, though it ranges in the east as far south as Australia, and in America as Patagonia, it is not recorded from South Africa.

To the eastward it is found as far as the China seas. Severtzoff states (*Turk. Jevotn.* p. 70) that it is common and breeds throughout Turkestan; and, according to Dr. Jerdon (*B. of India*, ii. p. 836), "it is exceedingly abundant all over India, frequenting tanks, marshes, and rivers, and occasionally hunting over the fields. It feeds alike on aquatic food and on grasshoppers, beetles, and other insects, and is a noisy bird. It does not breed in this country, that I am aware of. Mr. Brooks, C.E., Mirzapore, who has paid much attention to the nidification of these and other birds, informed me that he saw these birds passing up the Ganges in continued flocks, whilst other species were breeding at the time in the vicinity. The birds that visit India probably breed in Central and Western Asia." According to Mr. Holdsworth it is common in Ceylon; and Lieut. W. Vincent Legge says (*Ibis*, 1874, p. 33) that it is not common in Southern Ceylon, commencing on the south-east coast and getting more numerous towards the north, where it is more abundant than any other species. In Siberia it is not a common species; for neither Von Middendorff nor Von Schrenck met with it; but Dr. G. Radde says that he killed a female on the Tarei-nor, where it appeared in small flocks on the 6th May, old style. Père David states that he has frequently seen in North China a large Tern with darkish primaries and short tail, which Mr. Howard Saunders believes to be this species; and I have figured a specimen in winter dress from Amoy. It appears to occur through the Malay archipelago down to Australia, in which latter country it is stated by Mr. Gould (*l. c.*) to be very rare; and, he adds, only two specimens have been obtained there—one on the Victoria River, in North-western Australia, and the other at Moreton Bay.

On the American continent it is somewhat remarkable that it does not appear to occur on the Pacific side, though it is found on the east coast from the United States down to Patagonia, and it is also recorded by Dr. Gundlach as occurring in Cuba. I found it breeding on Galveston Island, in Texas; and it was not uncommon at Matamoras in July and August. Mr. O. Salvin says that it was common at Chiapam, in Guatemala; Messrs. Sclater and Salvin record it from Southern Brazil; and Darwin (*Voy. Beagle*, iii. p. 145) obtained a specimen at Bahia Blanca, in Northern Patagonia, and adds that he saw a flock, which he believed to be of this species, fishing seventy miles from land, off the mouth of the Rio Negro, on the Patagonian coast. In Europe I

have never had an opportunity of watching the habits of this Tern; but when in Texas I met with it breeding in considerable numbers on Galveston Island, and took a large series of eggs, most of which were unfortunately lost in transit. In habits it reminded me a good deal of the Sandwich Tern, but was rather more Gull-like, and its call-note especially bore resemblance to that of a Gull. I found it breeding in colonies; and when I was engaged in examining the nests the parent birds flew anxiously round, uttering loud cries. As a rule, the nests were mere holes scratched in the sand; but in some instances an attempt had been made to form a bed of straws and drift-stuff for the reception of the eggs, which were generally three in number, though in one or two instances I found as many as four in one nest, whereas in Europe two or three are the usual complement. I did not notice these birds fishing; they seemed to be feeding chiefly on insects, of which there were quantities in the neighbourhood of the breeding colonies. On the wing they were exceedingly swift and elegant; and their flight seems more powerful than that of most of the smaller species of Terns. According to Von Heuglin this Tern feeds chiefly on Orthoptera of all sorts and sizes, *Libellulæ*, Coleoptera and Lepidoptera, occasionally also Mutillidæ, which it catches with ease on the wing. When there is a prairie-fire it is found there, with many other species of birds, darting into the dense smoke in pursuit of locusts; and it also catches young birds and small mammals, and is often seen fishing amongst the surf. Mr. O. Salvin, who met with it in Algeria, says (*Ibis*, 1859, p. 365) that it feeds over the grass-fields and open land, hovering and descending, as it does on our English coast over a shallow, its food being grasshoppers and beetles instead of sand-eels.

I am indebted to Mr. H. Seebohm for the following notes on the habits and nidification of this Tern, as observed by him in Greece and Asia Minor:—" *Sterna anglica* is a common bird in the breeding-season on the islands in the lagoons of Greece and Asia Minor. Towards the end of May and early in June, considerable numbers of their eggs are collected for culinary purposes, by the fishermen employed, upon the elaborate system of stakes and reed fences used in the complicated fisheries of these shallow waters. These birds breed in colonies, selecting one or two islands in the lagoon, upon which they lay their eggs in great numbers. Sometimes they make no nest; but generally they scratch a slight hollow in the earth or sand, and frequently a bit of seaweed or dry grass forms an apology for a lining. Two is the usual number of eggs; and I have frequently found three, but never four. The eggs of this bird are by no means so handsome as those of *Sterna cantiaca*; nor are they, on an average, quite so large. A usual-sized egg measures 2 inches by  $1\frac{1}{4}$  inch. A smaller and rounder egg measures  $1\frac{2}{4}$  inch by  $1\frac{1}{4}$  inch, whilst an abnormally large but still single-yolked one reaches the dimensions of  $2\frac{1}{4}$  inches by  $1\frac{1}{4}$  inch. The ground-colour of the eggs is a yellow ochre or stone-colour, varying on the one hand to a greyish white, and on the other to very dark stone-colour or brown citron; occasionally the ground-colour of the eggs is pale greenish brown. The colour of the spots is sometimes greenish brown, sometimes reddish brown. The underlying spots are usually very distinct, and are, of course, the same colour as the overlying spots, but paler and greyer. Most ornithologists will by this time be aware that the underlying spots on the eggs of all birds are of the same colour as the overlying spots, but that the former are underneath and show through the ground-colour. By removing the thin coat of ground-colour with a penknife the underlying spots will be undistinguishable from the overlying spots. The spots on the eggs of *Sterna*

*anglica* are generally small and irregularly round. Occasionally they are large irregular-shaped blotches, and occasionally fine streaks, and sometimes a mixture of streaks and small spots. They are generally pretty equally scattered over the surface of the egg; but occasionally the greater number are in a ring round the large end. A series of forty eggs from Asia Minor show somewhat greater variety and brilliancy of colouring than the same number from Greece, though the latter were selected from a greater number. The note of *Sterna anglica* reminds me always of the laugh of a Gull. It may be represented by the syllables *ef, ef, ef*, or *af, af, af*."

I possess a large series of the eggs of this Tern from Greece, Asia Minor, and from Galveston Island, in Texas, which do not vary much in size or coloration; and I cannot add any thing to Mr. Seebohm's excellent description above given.

The specimens figured are the adult specimens, in summer and winter dress, above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* (summer plumage). Turkey. *b*, ♀. Albania, 1872 (*Hanbury Barclay*). *c*, *ad.* North-American coast (*J. Krider*).

*E Mus. Howard Saunders.*

*a*, *b*, ♀. Coria del Rio, Andalucia, April 24th (*H. S.*). *c*, *juv.* Tamak, Crimea, August 1860 (*Th. Schmidt*). *d*, *ad.* Cashmere lake, breeding (*Colonel Delmé Radcliffe*). *e*. Amoy, winter (*R. Swinhoe*). *f*, ♀. S.E. Ceylon, March 18th, 1872. *g*, ♂. S.E. Ceylon, August 11th, 1873 (*Vincent Legge*). *h*, ♂. Aripo, N.W. Ceylon, August 12th, 1866 (*E. Holdsworth*). *i*, *j*. South Brazil (*Rogers*).





SANDWICH TERN.  
STERNA CANTIAEA.

## STERNA CANTIACA.

(SANDWICH TERN.)

*Sandwich Tern*, Lath. Syn. iii. pt. 2, p. 356. no. 9 (1785).? *African Tern*, Lath. tom. cit. p. 354. no. 5 (1785).*Sterna cantiaca*, Gmel. Syst. Nat. i. p. 606 (1788, ex Lath.).*Sterna africana*, Gmel. tom. cit. p. 605 (1788, ex Lath.).*Sterna sandwicensis*, Boys, Nat. Hist. and Antiquities of Sandwich, p. 851, pl. (1789?).*Sterna boysii*, Lath. Ind. Orn. ii. p. 804 (1790).*Sterna columbina*, Schrank, Fauna Boica, i. p. 252. no. 215 (1798).*Sterna stubberica*, Bechst. Gemeinn. Naturg. Deutschl. iv. p. 679 (1809).*Sterna canescens*, Meyer, Taschenb. deutsch. Vogelk. ii. p. 458 (1810).*Thalasseus cantiacus* (Gm.), Boie, Isis, 1822, p. 563.*Actochelidon*, Kaup (*Sterna cantiaca*, Gm.), Natürl. Syst. p. 31 (1829).*Thalasseus canescens* (Mey.), C. L. Brehm, Vög. Deutschl. p. 776 (1831).*Thalasseus candicans*, C. L. Brehm, op. cit. p. 777 (1831).*Sterna acuflavida*, Cabot, Proc. Bost. Soc. ii. p. 257 (1847).*Thalasseus Pauli de Württemberg*, C. L. Brehm, Vogelfang, p. 346 (1855).*Thalasseus acuflavidus* (Cab.), Coues, Proc. Phil. Ac. 1862, p. 540.*Actochelidon cantiaca* (Gm.), Gray, Hand-l. of B. iii. p. 119 (1871).*Actochelidon acuflavida* (Cabot), Gray, Hand-l. of B. iii. p. 119 (1871).

*Hirondelle de mer Caugek*, French; *Golondrina de mar pogada*, Spanish; *Beccapesci*, Italian; *Brand-Meerschwalbe*, *Kentische Meerschwalbe*, German; *groote Zeezwaluw*, Dutch; *Kentisk Terne*, Danish.

*Figuræ notabiles.*

Werner, Atlas, *Palmipèdes*, pl. 2; Kjærb. Orn. Dan. taf. 51 a; Naumann, Vög. Deutschl. taf. 250; Sundevall, Svensk. Fogl. pl. 78. fig. 4; Gould, B. of Eur. pl. 415; id. B. of G. Brit. v. pl. 69; Schlegel, Vog. Nederl. pl. 359; Audub. B. of Am. pl. 431.

*Ad. ptil. æst.* fronte, pileo et pilei lateribus cum nuchâ nitidè nigris, plumis in nuchâ elongatis: dorso et alis suprâ pallidè cærulescenti-cinereis: remigibus albis, primariis in pogonio interno intùs fumoso-cinereis et primario primo in pogonio externo nigricanti-griseo, reliquis extùs pallidè margaritaceis: caudâ margaritaceo-albâ: corpore reliquo albo: rostro nigro, flavo terminato: iride fuscâ: pedibus nigris.

*Ad. ptil. hiem.* pileo haud nigro, sed fronte albâ et pileo postico cum nuchâ albis profusè nigro guttatis: ante oculum vittâ nigrâ: corpore reliquo, alis et caudâ sicut in ptilosi æstivali picturatis.

*Adult Male in summer* (Turkey, April). Forehead, crown, nape, and sides of the crown to below the eye glossy black, the feathers on the nape elongated; a white line is left from the nostril along the edge of the upper mandible; entire mantle pale French or pearl-grey; quills white, the primaries with a broad

blackish grey line along the inner web by the shaft, the first quill with the outer web blackish grey, the rest with the outer web pale pearl-grey; tail greyish white; rest of the plumage pure white; bill black with the tip yellow; iris dark brown; legs black. Total length about 14·5 inches, culmen 2·35, wing 12·1, tail 6·8, outer rectrices extending 3·4 beyond the central ones, tarsus 1·1.

*Adult Female.* Resembles the male in plumage.

*Adult in winter* (Albania, 12th October). Differs from the bird above described in wanting the black crown, the forehead being white, and the crown from the eye backwards, with the nape, being white closely spotted with black; before the eye is a blackish spot; rest of the plumage as in the summer dress.

*Nestling* (Russia, 1st August). Crown and nape black, closely marked with pale buff; back and wing-coverts pearl-grey tinged with buff and boldly barred and mottled with black; quills dark hoary grey margined with white; tail blackish grey, also margined with white; rest of the plumage white.

LIKE most of the sea-birds, the present species of Tern has a very extensive range, being found in Europe, Africa as far south as the Cape of Good Hope, and America as far south as Brazil.

In Great Britain it breeds on various parts of the coast, but has of late greatly diminished in numbers. According to Mr. A. G. More it bred (in 1865) in Cornwall, occasionally in South Kent, in Essex, and probably also in North Kent at the mouth of the Thames, in Lancashire, on the Farn Islands, and Isle of Coquet off Northumberland, and on the coast of Cumberland; but in some of these localities it is no longer met with in the breeding-season. Mr. Cordeaux states that it is not uncommon off the Yorkshire and Lincolnshire coasts in the autumn, when flocks appear on their passage southward; and he adds that it is the first to move southward along the coast in the autumn—in large flocks, both old and young together, about the middle of August, preceding both the Arctic and common Tern in their autumn migration. Mr. Hancock, who speaks of it as a spring and autumn migrant on the coasts of Northumberland and Durham, adds that it breeds at the Farn Islands, and a few years ago bred abundantly on Coquet Island. According to Mr. Robert Gray (B. of W. of Scotl. i. p. 465), “In bygone years it was no uncommon thing to see flocks of this fine species fishing in shallow water on many parts of the coast. Serious inroads, however, have been made upon its breeding-haunts on both the east and west coast, and in places where formerly their eggs could be seen in hundreds it is now a rare occurrence to find more than the contents of one or two nests. Some of the best-known haunts, indeed, including the rocky islets near the Bass Rock on the east, and some islands on the Frith of Clyde on the west, have become entirely deserted; and it is questionable whether there is any breeding-station in Scotland at present equal to those of twenty years ago.

“There is a small colony of Sandwich Terns on Inchmoin, a low flat island on Loch Lomond, where they have been found breeding along with other species, and where they will probably increase if unmolested. In the time of Pennant this species seems to have bred on the isles of Loch Leven, in Fifeshire. Speaking of the birds in his ‘Tour in Scotland,’ he calls them ‘Great Terns’—the same name he gives those he saw on the Farn Islands, where the Sandwich Tern still retains its ground, although in greatly reduced numbers.

“I have of late years observed stray birds of this species frequenting the shores of East Lothian and Fifeshire; and it is to be hoped that the recent Act for Preservation of Sea-birds

will be the means of reinstating both it and the Roseate Tern in localities which have for years been wholly abandoned." I may add that Mr. J. A. Harvie-Brown mentions that he was informed by Mr. J. Crawford that the present species is frequently seen on the island of the Kyle of Tongue, and he considers that it breeds there, though he has not obtained the eggs. According to Thompson it is of occasional occurrence on the coast of Ireland; and, as below stated, Mr. Warren has found it breeding there. It has not been met with in Greenland or Iceland, and is not included by Mr. Collett in his work on the ornithology of Norway, though he states that it is said by Wallengren to have been seen at Namsos. Nilsson says that the specimen he described, which was obtained near Hög on the 21st July 1836, by the Rev. A. Cronsjö, was the first authentic Swedish-killed specimen, but that it is said to have also occurred on Gottland and near Gottenburg. It does not occur on the coast of Finland, and is exceedingly rare in all parts of the Baltic; but it is common on the German coasts of the North Sea and in most parts of Denmark. Kjærbølling says that it is found near the sea, and breeds on Ringkjöbing fiord and on Nordrerønnerne and Læsö, Hirtsholmen, and Mors in the Liimfiord, but is especially numerous in Jordsand and Norderoog, near Pelworm. According to Baron von Droste Hülshoff it is very common in Holstein, Schleswig, Oldenburg, East Friesland, and the Netherlands; and Professor Schlegel says that it breeds in large numbers on Texel, Eijerland, Rottum, and the dunes in Zeeland. It arrives in Holland in May, and leaves again in September. On the coast of Belgium, especially off Ostend, it is said to be numerous, and is found in equal numbers on the French coast in August and again, though less numerous, in May, during passage. It is stated by Professor Barboza du Bocage to occur on the coast of Portugal, and breeds in Spain. Mr. Howard Saunders states (*Ibis*, 1871, p. 398) that it is "tolerably abundant along the coast, breeding at the mouth of the Ebro and also on the shores of the Mar Menor, near Cartagena;" and Colonel Irby writes (*Orn. Str. Gibr.* p. 209) that it "is very common in the Straits of Gibraltar in autumn, winter, and spring. Sometimes thirty or forty may be noticed sitting together on the small isolated rocks near Cabrita Point, and will allow a boat to approach within a few yards. They pass north about the first week in April." According to Bailly it has been twice obtained in Savoy (once on the 29th March, 1849, and a second time on the 9th April, 1852), in both instances on the lac du Bourget; and Salvadori states that it is somewhat rare in Continental Italy, and is met with but rarely, on passage, in Vienna, Tuscany, and Rome. In Sardinia and Sicily it is common, and resident; and, according to Mr. C. A. Wright, a few are sometimes seen in Malta in autumn and winter. It is stated by Lord Lilford to be rare in the Ionian Islands, and occasionally occurs in autumn at Butrinto. According to Dr. Krüper it is found in Greece on passage and during the winter; and Messrs. Elwes and Buckley state (*Ibis*, 1870, p. 337) that it is "common on the coast of the Black Sea in summer, and breeds near Kustendji." It doubtless occurs along the coast of Asia Minor, though I lack information respecting its range there; and in North Africa it is found, though not commonly. Captain Shelley says (*B. of Egypt*, p. 297) that it is more confined to Lower Egypt than the Gull-billed Tern, and is by no means so common as that species; and Von Heuglin remarks that he only met with it near Damietta and Alexandria throughout the winter to May, and those he saw were generally old birds. It is found on the coast of Tripoli; Favier says that it is found abundantly near Tangier from November to February; and it is met with down the west coast of

Africa to the Cape of Good Hope. Messrs. Shelley and Buckley obtained it at Accra and Cape-Coast Castle; it has been met with on the Senegal coast; DuChaillu obtained it on the Camma river; Bocage records it from Benguela; Andersson states that it is common at Walwich Bay, and occurs on all parts of the coast between that locality and Table Bay; and Mr. E. L. Layard (B. of S. Afr. p. 370) says that it is pretty common throughout the sea-board of the Cape colony; and it is stated to be numerous about Capetown. It also inhabits the Canary Islands; and Mr. F. DuCane Godman states (Ibis, 1872, p. 222) that it is said to inhabit Lanzarote and Fuerteventura, and to breed in Alegranza.

To the eastward the Sandwich Tern is found at least as far as Sindh. Mr. Blanford records it (E. Pers. ii. p. 294) as common in the Makrán coast; and according to Mr. A. O. Hume (Stray Feathers, i. p. 285) it is exceedingly plentiful in the Kurrachee harbour, and everywhere along the coast from the mouths of the Indus to Gwader; and he also procured it at Muscat.

In the Nearctic Region the Sandwich Tern is found, Dr. Coues says, on the Atlantic coast of North America to Southern New England, the Bahamas, Cuba, Jamaica, ranging into Central America on both coasts, breeding in Honduras, and straggling south into Brazil. I have met with it on the Atlantic coast, but did not observe it when collecting on the coasts of Texas and Mexico. Dr. Coues says that in North Carolina it is chiefly a migrant, but also a winter resident, sparingly, but none pass the summer there. It becomes numerous early in April, and remains through part of May, returning in September (a few probably somewhat earlier), and is very common until December. Mr. Salvin says (Ibis, 1866, p. 198) that it is very common on both coasts of Guatemala; and Mr. Howard Saunders possesses a specimen from Bahia, which is as far south as it appears to have been noticed.

Like all its allies, the Sandwich Tern is more frequently seen on the wing than perched or on the water. Its flight is strong and rapid; and it propels itself swiftly forward with sharp regular strokes of the wings, almost like a Pigeon. Should its breeding-station be invaded, the tenants of the nests sail round above, occasionally dashing down close to the intruder, uttering their sharp harsh cry. Like most of its allies it feeds chiefly on small fish, which it catches by plunging down on them, like the common Tern, after hovering for a moment to poise itself in the air. Like most of the Terns it is eminently sociable, and is found in large societies not only during the breeding-season but also in the winter; and they only disperse when engaged in the pursuit of their finny prey. They do not seek their food on the marshes, but outside on the coast, sometimes near the shore, and at others further out, according to the state of the weather; and during heavy, stormy weather they are said to fish amongst the breakers. When fishing they keep on the wing about twelve to twenty feet above the surface of the water, every now and then hovering over one spot, and, when a suitable fish is seen, plunging swiftly down on it, sometimes disappearing altogether for a moment under the surface.

This Tern is noisy; and its harsh call-note, which Von Droste not inaptly renders by the words *kirrhitt*, *kerrhitt*, may continually be heard where the bird is found. The breeding-colonies frequently contain large numbers of birds, and the nests are placed close together; but though they do not brook intruders of other species amongst them, yet one frequently finds other sea-birds breeding in the immediate vicinity. The place selected for nidification is usually a flat sandy place near the sea, either bare of vegetation or where there is a short growth of grass;

and no nest is constructed, the eggs, two or three in number, being placed in a slight depression in the sand or sandy soil. It is said also to breed sometimes in rocky places, laying its eggs on the bare rock. The eggs, which are usually deposited in June, are three in number, and are subject to considerable variation in coloration and markings. Those in my collection vary in ground-colour from white to stone-buff, and are marked with purplish or pale brownish grey underlying shell-markings and blackish brown surface-spots, some being much more marked than others. One has merely a wreath of blotches round the larger end; but most are somewhat boldly marked, and some have peculiar hieroglyphic streaks on them, as if drawn with a pen. In size they vary from 2 inches by  $1\frac{1}{4}\frac{6}{10}$  inch to  $2\frac{3}{4}\frac{0}{10}$  by  $1\frac{1}{4}\frac{8}{10}$  and  $2\frac{8}{4}\frac{0}{10}$  by  $1\frac{1}{4}\frac{7}{10}$  inch; and I observe that in all the shell is rather thin and fragile. The young are hatched in about three weeks after incubation commences; and as soon as they are able to fly they accompany their parents to the coast; but some time elapses ere they are able to get their own living.

Although, as above stated, the Sandwich Tern is almost always found breeding on the sea-coast, yet there are instances of colonies nesting by fresh water away from the sea; and an interesting account of one of these colonies is given by Mr. Warren, who writes (Zool. 1877, p. 101) as follows:—"Few people would expect to find the Sandwich Tern nesting on a little moorland lough some miles from the sea, and totally unconnected with it; yet such was the locality selected by the Sandwich Terns frequenting Killala Bay and the estuary of the river Moy. On the 7th of April, 1851, near the island of Bartragh, I first became acquainted with this beautiful Tern. Having previously resided in the south of Ireland, it was quite unknown to me; and when the attention of my brother and myself was first attracted by its very peculiar cry (which if once heard can never be mistaken or forgotten) we were very much puzzled, as for a long time we could not make out what bird it was uttered by, or from what direction it proceeded. The sound appeared to come from all points of the compass; yet no birds appeared in sight: after some time we chanced to look upwards, and were only just able to perceive some birds wheeling about and soaring at an immense height, and all the while screaming loudly. This wild flight and strange cry, so unlike that of any other bird we knew, induced us to watch them closely; and after some time they gradually lowered their flight to the water, and we then saw they were some species of Tern. We got into our boat and succeeded in shooting a couple, and found they were the Sandwich Tern. This peculiar habit of soaring to a great height (almost out of sight) and wheeling about in wide circles, occasionally chasing each other and screaming loudly, is more often to be witnessed early in the season, before they begin to sit, although occasionally in autumn a pair may be seen acting in a similar manner, but almost invariably on fine bright days. As these Terns remained feeding about the bay and estuary, we were most anxious to find their breeding-ground, but, although we made many inquiries and searches, we were unable to discover it. About the time we supposed the females were hatching, the male birds were daily seen flying inland towards Lough Conn, with sand-eels in their bills to feed their mates. Lough Conn, however, was visited twice without our seeing any trace of the Sandwich Terns, the only members of the *Laridæ* met with being Black-headed Gulls and common Terns. Our search for the breeding-haunts having thus failed, I gave it up for a time; but in May 1857 I was told of a small lough upon which a number of small Gulls breed, and which is situated near the residence of the late Mr. Gardiner, of Cloona, two miles from the

town of Ballina, and about three miles from the estuary. This lough, nearly surrounded by a bog, is about twenty or thirty acres in extent, and has a wooded island in the centre, with a quantity of reeds and bulrushes at one end. On visiting the spot I found a large colony of Black-headed Gulls breeding amongst the reeds, and a small colony of the Sandwich Terns located on a low flat mud-bank scarcely above the level of the water. Some of these Terns had no nests to speak of, but laid their eggs in a slight depression of the soil, thinly lined with a few blades of dried grass; and (as well as I can remember now) I think three was the average number of the eggs in each nest. When returning I brought five or six of the eggs back with me; and at that date (the last week in May) some were nearly hatched, and too far advanced for blowing, which shows that this species breeds much earlier than the smaller Terns. The following winter and spring being unusually wet, the level of the lake was raised so high as to cover the mud-bank upon which the Terns had had their nests; and as the bank continued under water during the summer of 1858, the Terns deserted this lake altogether. They have now moved to the little moorland lough of Rarouem, situated midway between Ballina and Killala, and within sight of the high road between those towns. This lough is considerably larger than that of Cloona, but is nearly surrounded by bog, with very swampy shores, and a large quantity of weeds growing on the margin. In some places these weeds grow far out towards the centre, where there is a small circular island about twenty yards in diameter, whereon a large number of Black-headed Gulls make their nests, as they do also among the reeds; but the Terns have theirs on a bare part of the island, a little way from those of the Gulls. This lake, with the adjoining land, is the property of Sir Charles Knox Gore, who, with the spirit of a true naturalist, strictly preserves it, and does not permit either Gulls or Terns to be disturbed; last season he had the bushes and long grass cut off the island, in order to give the birds more space for their nests, so that now, being well protected, there is every likelihood of this beautiful species increasing every year."

The specimens figured are the adult birds, in winter and in summer plumage, above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, pull. Volga, Russia, August 1st, 1860 (*Sabanäeff*). *b*, *c*, *d*. Albania, winter (*Hanbury Barclay*). *e*, ♂. Butrinto, Albania, October 12th, 1871 (*H. Barclay*). *f*, ♀. Sea of Marmora, April 28th, 1865 (*Robson*). *g*. S. Africa (*Layard*). *h*. Chiapam, Central America, January 1865 (*O. Salvin*).

*E Mus. Howard Saunders.*

*a*, ♂, *b*, ♀ ad. Walney Island, Lancashire, June 4th, 1865 (*H. S.*). *c*, ad. Buddonness, Frith of Tay, June. *d*, ♂ ad. Havre, July 27th. *e*, ♂ ad. Havre, August 29th. *f*, juv. Havre, August 1873. *g*, ♀ ad. Tamak, Crimea, June 1862 (*Th. Schmidt*). *h*, ♀ ad. Malaga, Spain, December 28th, 1871 (*Rios*). *i*, ad. Tangier, December (*Olcese*). *j*, ad. Kurrachee, Sind, January 9th, 1875 (*W. T. Blanford*). *k*, im., *l*, *m*. Table Bay, S. Africa, August 1870 (*E. L. Layard*). *n*, ad. Virginia, U. S., breeding (*Krider*). *o* (winter pl.). Rio de Janeiro. *p*, pullus. Nordeney, Denmark (*Benzon*).

*E Mus. C. A. Wright.*

*a*. Malta, winter of 1863 (*C. A. W.*)





M & N Hanhart imp

SOOTY TERN.  
*STERNA FULIGINOSA.*

J G Keulemans lith

## STERNA FULIGINOSA.

(SOOTY TERN.)

- Hirondelle de mer à grande envergure*, Buff. Hist. Nat. Ois. viii. p. 345 (1781).  
*Sooty Tern*, Lath. Synop. iii. pt. 2, p. 352 (1785).  
*Sterna fuliginosa*, Gmel. Syst. Nat. iii. p. 605 (1788, ex Lath.).  
*Sterna infuscata*, Licht. Verz. Doubl. p. 81 (1823).  
*Onychoprion*, Wagl. (*Sterna serrata*, Forst.) Isis, 1832, p. 277.  
*Planetis*, Wagl. (*Sterna guttata*, Reinh. Forst. in MS.) Isis, 1832, p. 1222.  
*Planetis guttatus*, Wagl. Isis, 1832, p. 1222.  
*Haliplana*, Wagl. (*Sterna fuliginosa*, Gm.) Isis, 1832, p. 1224.  
*Haliplana fuliginosa* (Gm.), Wagler, Isis, 1832, p. 1224.  
*Hydrochelidon fuliginosum* (Gm.), Bp. Comp. List, p. 61 (1838).  
*Sterna serrata*, Forst. Desc. An. ed. Licht. p. 211 (1844).  
*Thalassipora infuscata* (Licht.), Rüpp. Syst. Uebers. p. 140 (1845).  
*Anous l'herminieri*, Less. Desc. Mamm. et Ois. p. 255 (1847).  
*Onychoprion fuliginosus* (Gm.), Gould, B. of Austr. vii. pl. 32 (1848).  
*Haliplana infuscata*, Licht. Nomencl. Av. p. 97 (1854).  
*Sterna gouldi*, Reich. Schvimvög. Suppl. pl. xii. fig. 829.  
*Haliplana gouldi* (Reich.), Bp. Compt. Rend. xlii. p. 773 (1856).  
*Haliplana serrata*, Bp. Compt. Rend. xlii. p. 773 (1856).  
*Onychoprion fuliginosus* (Gm.), Newton, Ibis, 1859, p. 371.  
*Sterna luctuosa*, Phil. & Landb. in Wieg. Arch. 1866, p. 126.  
*"Haliplana fuliginosa, var. crissalis, Baird,"* Lawr. Proc. Bost. N.H. Soc. 1871, p. 285.  
*Hydrochelidon infuscata* (Licht.), Heugl. Orn. N.O.-Afr. ii. p. 1457 (1873).

*Figuræ notabiles.*

Naumann, Vög. Deutschl. taf. 387; Gould, B. of Austral. pl. 32; Temm. & Schl. Fauna Japon. pl. 89; Audub. B. of Am. pl. 432; Wilson, Am. Orn. pl. 72.

*Ad.* fronte, capitis lateribus ad oculum, mento, gulâ et gutture cum corpore toto subtùs albis: pileo striâ a basi rostri ad oculum, nuchâ et corpore suprâ nigris, pileo et nuchâ nitidè nigris, corpore suprâ fusco-nigro: caudâ nigrâ, valdè furcatâ, rectrice extimâ utrinque albâ, in pogonio interno versus apicem fumoso-cinereâ: rostro et pedibus nigris: iride fuscâ.

*Juv.* sordidè schistaceo-niger, subtùs pallidior abdomine imo albo-cinereo, subcaudalibus cinereis: plumis in corpore superis cervino-albo apicatis.

*Pullus* lanugine tectus: capite, collo et corpore suprâ fumoso-griseis griseo-albo guttatis: corpore subtùs albo.

*Adult* (Florida Keys). Forehead, sides of the head to the eye, chin, throat, and entire underparts pure

white; crown, a stripe from the base of the bill through the eye, nape, hind neck, and entire upper parts black, the crown and hind neck deep glossy black, the rest of the upper parts having a brownish tinge; tail black, deeply forked, the outermost tail-feather on each side white, except on the terminal portion of the inner web, where they are greyish black; bill and legs black; iris deep reddish brown. Total length about 16 inches, culmen 1·9, wing 11·2, tail 7·0, tarsus 0·92.

*Young* (Ascension Island, December). Entire plumage dull slaty black, except the lower abdomen, which is greyish white, and under tail-coverts, which are dull ashy grey; upper parts of the body darker than the underparts, most of the feathers tipped with buffy white; tail almost even.

*Young in down* (Ascension). Head, neck, throat, and entire upper parts dark grey with a silvery tinge, closely dotted with greyish white; rest of the underparts white.

*Obs.* Judging from the specimens I have seen, the summer and winter dress does not differ, nor do the sexes differ in plumage. I notice, however, that in one specimen, apparently in adult dress, the white passes right round the lower neck, dividing the black on the head from that on the back.

FOUND numerously on the southern coasts of the United States and of Central America, the present species is common on some of the islands in the Atlantic, on parts of the African coast, being somewhat rarer on the coast of Asia, though tolerably common and generally distributed in the Australian seas; but to Europe it is an extremely rare straggler.

There are, so far as I can gather, only four undoubted instances of its occurrence in Europe, viz.:—one shot at Tutbury, near Burton-on-Trent, in October 1852, and figured by Yarrell in his ‘British Birds;’ one shot near Wallingford, Berks, on the 21st June, 1869, now in the possession of Mr. Franklyn (Mr. Harting, *Handb. Brit. B.* p. 170, says that he examined this specimen in the flesh); one which is, Borggreve says, in the collection of Dr. Gueinzus, of Prödel, near Magdeburg, and was obtained near that town; and one obtained near Verdun, in France. This last, Messrs. Degland and Gerbe write (*Orn. Eur.* ii. p. 463), “a magnificent male in full plumage, was taken alive on the 15th June, 1854, on the banks of the Ariège, near the village of Verdun. It was unwounded, but was so fatigued that it was caught with the hand. It is now in the Lille Museum.” A fifth example is stated by the Rev. J. B. Selwood (*Field*, 17th July, 1869) to have occurred on the estuary of the Axe, near Axminster, in England; but there is considerable doubt as to whether this gentleman was right in his identification of the species.

In Africa it is tolerably widely distributed. Messrs. Finsch and Hartlaub state that it is found on the Red Sea. Heuglin met with it south of 14° N. lat.; and it is common as far as the Somali coast. It also occurs on the east coast of Africa, and is recorded from Rodriguez, Mauritius, and Round Island, north of Mauritius. On the west coast it is recorded by Pel from the Gold Coast; and, according to Messrs. Finsch and Hartlaub, there is a specimen in the Berlin Museum from Senegal. On the island of Ascension vast quantities breed; but it is, Mr. Melliss says (*Ibis*, 1870, p. 106), “not very abundant on St. Helena, but inhabits the rocky islets off the coast, George’s and Spury Islands, in considerable numbers. It does not remain all the year round at St. Helena, and probably migrates to Ascension, nearly 700 miles distant, where these birds are to be found in tens of thousands.”

On the coasts of Asia it is somewhat rarer than on the African and American coasts, and is

not recorded from China, though it is said to occur in Japan and is figured in the 'Fauna Japonica.' Forster records it from New Caledonia and Easter Island; Peale from the Paumotu group, Rosa and Honden Islands; Bonaparte states that he examined two obtained by M. E. Jardin in the Marquesas; and Dr. Finsch states (J. f. O. 1872, p. 56) that Dr. Gräffe sent a specimen from Upola, Samoa Islands. Gould says that it is generally distributed over the seas surrounding Australia. Gilbert found it breeding on the Houtmann's Abrolhos in December, and Macgillivray in Torres Straits in May and June.

On the American coasts it is found from the Southern United States down to Chili, and is extremely common on the Florida Keys. I once saw it off the coast of Texas; Grayson obtained it on the Pacific coast of Mexico; Mr. Osbert Salvin obtained (Ibis, 1864, p. 385) a specimen in Curlew Cay, in British Honduras; and Philippi and Landbeck record it from Chili. According to Dr. von Martens one was shot by Dr. Cole in Bermuda in October 1846. Wedderburn picked one up on the shore for dead; but it proved to be alive, and escaped out of his hands. In October 1854 another was caught on the shore in an exhausted state. It has also been met with on the island of Cuba, in Jamaica, at St. Croix, and at St. Thomas, near which last island it breeds numerously. Dr. Elliott Coues also states that it occurs on the Pacific coast; Lichtenstein records it from the Aleutian Islands.

I have had no opportunity of observing the habits of this Tern personally; but several ornithologists have visited its breeding-haunts, and have published the results of their observations. Audubon, who visited the Tortugas, where this species breeds in vast numbers, to observe its breeding-habits, has published some interesting notes on its nidification, from which (B. Am. vii. p. 250) I cull the following:—"On landing I felt for a moment as if the birds would raise me from the ground, so thick were they all round, and so quick the motion of their wings. Their cries were indeed deafening; yet not more than half of them took wing on our arrival, those which rose being chiefly male birds, as we afterwards ascertained. We ran across the naked beach, and as we entered the thick cover before us and spread in different directions we might at every step have caught a sitting bird or one scrambling through the bushes to escape from us. Some of the sailors, who had more than once been there before, had provided themselves with sticks, with which they knocked down the birds as they flew thick around and over them. In less than half an hour more than a hundred Terns lay dead in a heap, and a number of baskets were filled to the brim with eggs. We then returned on board, and declined disturbing the rest any more that night. The next morning Mr. Ward told me that great numbers of the Terns left their island at two o'clock, flew off towards the sea, and returned a little before day, or about four o'clock. This I afterwards observed to be regularly the case, unless there happened to blow a gale—a proof that this species sees as well during the night as by day, when they also go to sea in search of food for themselves and their young. In this respect they differ from the *Sterna stolidus*, which, when overtaken by darkness, even when land is only a few miles distant, alight on the water, and frequently on the yards of vessels, where, if undisturbed, they sleep until the return of day. *Sterna fuliginosa* never forms a nest of any sort, but deposits its eggs in a slight cavity, which it scoops in the sand under the trees." He also remarks that this species seldom alights on the water, where it seems incommoded by its long tail, and that its flight is not so buoyant and wavering as that of many of the Terns, but

firm and steady like that of the Cayenne Tern. Like some of the smaller Gulls it not unfrequently hovers close to the water to pick up floating objects, such as small bits of fat pork and greasy substances thrown overboard purposely for making the experiment.

Reverting to his expedition to Bird Key, he further writes (*tom. cit.* pp. 251, 252) as follows:—"Early next morning I was put on shore, and remained there until I had completed my observations on the Terns. I paid no attention to their lamentable cries, which were the less piercing that on this occasion I did not molest them in the least. Having seated myself on the shelly sand, which here formed the only soil, I remained almost motionless for several hours, in consequence of which the birds alighted about me at the distance of only a few yards, so that I could plainly see with what efforts and pains the younger females deposited their eggs. Their bill was open, and their panting indicated their distress; but after the egg had been expelled they immediately walked off in an awkward manner, until they reached a place where they could arise without striking the branches of the bushes near them, when they flew away. Here and there, in numerous places within twenty yards of me, females, having their complement of eggs, alighted, and quietly commenced the labour of incubation. Now and then a male bird also settled close by and immediately disgorged a small fish within the reach of the female. After some curious reciprocal nods of their head, which were doubtless intended as marks of affection, the caterer would fly off. Several individuals which had not commenced laying their eggs, I saw scratch the sand with their feet, in the manner of the common Fowl while searching for food. In the course of this operation they frequently seated themselves in the shallow basin to try how it fitted their form, or find out what was still wanted to ensure their comfort. Not the least resemblance of a quarrel did I observe between any two of these interesting creatures; indeed they all appeared as if happy members of a single family; and, as if to gratify my utmost wishes, a few of them went through the process of courtship in my presence. The male birds frequently threw their heads over their backs, as it were, in the manner of several species of Gulls; they also swelled out their throats, walked round the females, and ended in uttering a soft puffing sound as they caressed them. Then the pair for a moment or two walked round each other, and at length rose on wing and soon disappeared. It was curious to observe their actions whenever a large party landed on the island. All those not engaged in incubation would immediately rise in the air and scream aloud; those on the ground would then join them as quickly as they could, and the whole, forming a vast mass with a broad extended front, would, as it were, charge us, pass over for fifty yards or so, then suddenly wheel round, and again renew their attack. This they would repeat six or eight times in succession. When the sailors, at our desire, all shouted as loud as they could, the phalanx would for an instant become perfectly silent, as if to gather our meaning; but the next moment, like a huge wave breaking on the beach, it would rush forward with deafening noise. When wounded and seized by the hand, this bird bites severely, and utters a plaintive cry differing from its usual note, which is loud and shrill, resembling the syllables *ooee oo-ee*. Their nests were all scooped near the roots or stems of the bushes, and under the shade of their boughs, in many places within a few inches of each other."

The eggs of this Tern, of which I possess a large series from Ascension and the Florida Keys, vary considerably in markings, though not much in coloration. The ground-colour varies from pure white to warm buff; and the markings consist of pale purplish grey shell-blotches and

deep-red surface-spots and blotches. Some are but sparingly marked with spots or heavy blotches, whereas others are profusely covered with larger or smaller markings. In size thirty eggs in my collection vary from  $1\frac{3}{4}$  by  $1\frac{1}{4}$  to  $2\frac{5}{16}$  by  $1\frac{1}{8}$  inch. The major portion of these eggs were obtained for me by the late Captain Rowland M. Sperling, who published the following notes (Ibis, 1868, p. 286) respecting his visit to the breeding-colony on the island of Ascension, viz.:—"On the 8th of last June I was literally cast on shore on the island of Ascension; for the periodical rollers were dashing against the coast and my boat was upset in the surf; so giving myself a good shake, as the only available means of drying my clothes, I started for 'Wide-awake Fair,' the name which the blue-jackets who have visited the place have considered an appropriate one to designate the spot where the birds gather for nesting-purposes. Leaving Comfortless Cove about the middle of the day, I walked over two dreary miles of cinders and ashes, uncheered by a symptom of vegetation, before I noticed flocks of Terns converging from various parts of the ocean to a spot apparently about a mile in front of me; but as yet I observed nothing of the 'fair:' at length, on turning slightly to the left and surmounting a low ridge, the whole scene was disclosed.

"A gradual incline of a quarter of a mile terminated in a plain of ten or fifteen acres in extent, which was literally covered with the birds. The plain was surrounded by low mountains, except on the side on which we stood; and being entirely sheltered from the wind, its heat under the full blaze of a tropical sun was very oppressive. No description can give an adequate idea of the effect produced by the thousands upon thousands of these wild sea-birds floating and screaming over this arid cinder-bed, the eggs and young scattered so thickly on the ground that in some instances it was impossible to avoid crushing them and the bleached bones of dead birds distributed in all directions. During our short walk down the incline, large flocks of parent birds hovered over our heads, and assailed us with plaintive cries, regardless of our sticks, with which we might have killed any number of them; but their beautiful pure dark and white plumage and graceful motions caused it to appear almost a sin to knock any of them down. On arriving within the precincts of the breeding-grounds their numbers increased; large flocks were arriving in endless succession from seaward; clouds of birds rose from the ground, and, joining those already attending us, their wheelings and gyrations almost made us giddy. I sat down on a lump of cinder; and the society, being at length convinced that my policy was not aggressive, went on with the ordinary routine of incubation.

"There were young of all sizes, from the little callow ones just hatched to the nearly fledged birds that fluttered and crawled like young pigeons. There were also lots of eggs exposed on the bare ground; but in most instances the old bird sat on its solitary treasure, hissing defiance as I approached, and fighting manfully if I attempted to remove it. The young are of a very light sooty colour both above and beneath, the ends of most of the feathers having a white spot the size of a pea, which gives them a speckled appearance. The whole of the 'fair,' both in smell and in appearance, reminds one of the effect produced by a sudden entry into a large pigeon-house.

"In the interstices of the scorix and lava round this nursery lurk numbers of wild cats (not *Felis catus*, but the domestic breed run wild); and the bones of both old and young birds tell the tale of the ravages they commit.

"I was surprised to learn that all the Terns leave Ascension as soon as the young can fly; but, from the shortness of my stay, I was unable to ascertain the precise times of their arrival and departure. I should, however, judge by the appearance of the young at the time of my visit, that they would all be ready to start by the end of July. Whither do they go?"

A specimen of a tolerably closely allied species, *Sterna anæsthesia*, Scop. (Del. Faun. et Flor. Ins. i. p. 92. no. 72, 1786), stated to have been obtained on the British coast, was exhibited at a meeting of the Zoological Society, on the 6th February 1877, by Mr. Howard Saunders. This specimen was received by Mr. E. Bidwell from a bird-stuffer in the east end of London, who says that he received it in the flesh from one of the sailors employed on a light-ship at the mouth of the Thames; but the chain of evidence as to its being really a British-killed bird is scarcely sufficiently good. As this species has not been met with elsewhere within the limits of the Western Palearctic Region, I cannot think I should be justified in including it; but in order that, in case a specimen should turn up, it may be recognized, I give the differences between that species and *Sterna fuliginosa* as follows:—*Sterna anæsthesia* is a smaller bird, a specimen from Paternoster Island, shot by Captain Conrad, measuring—culmen 1·7, wing 10·3, tail 8·3, tarsus 0·8; the back and upper parts of the body are much lighter, or blackish slate-grey in colour, and much lighter than the crown; and the webbing of the feet differs greatly; for instead of being continued to the claws between the outer and middle toe, as in *Sterna fuliginosa*, it only descends to the last joint. Mr. Howard Saunders gives (P. Z. S. 1876, p. 665) drawings of the feet of both species, showing this difference very clearly. He also remarks that in the young of *Sterna anæsthesia* the underparts are light-coloured on emerging from the downy stage, whereas in *Sterna fuliginosa* they are dark.

The specimens figured are an adult bird from the Florida Keys and a young bird in down from Ascension.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a, b, ad.* Florida Keys (*Dr. Heermann*).

*E Mus. Howard Saunders.*

*a, ad., b, juv., c, pull.* Ascension Island, December 1876. *d, ad.* Howland Island.

*E Mus. F. Bond.*

*a, pull.* Ascension.

*E Mus. H. B. Tristram.*

*a.* Samoa Islands.

## Genus HYDROCHELIDON.

*Sterna* apud Brisson, Orn. vi. p. 211 (1760).

*Larus* apud Scopoli, Ann. I. Hist. Nat. no. 108 (1769).

*Hydrochelidon*, Boie, Isis, 1822, p. 563.

*Anous* apud Stephens in Shaw's Gen. Zool. xiii. pt. 1, p. 142 (1825).

*Viralva* apud Stephens, tom. cit. p. 167 (1825).

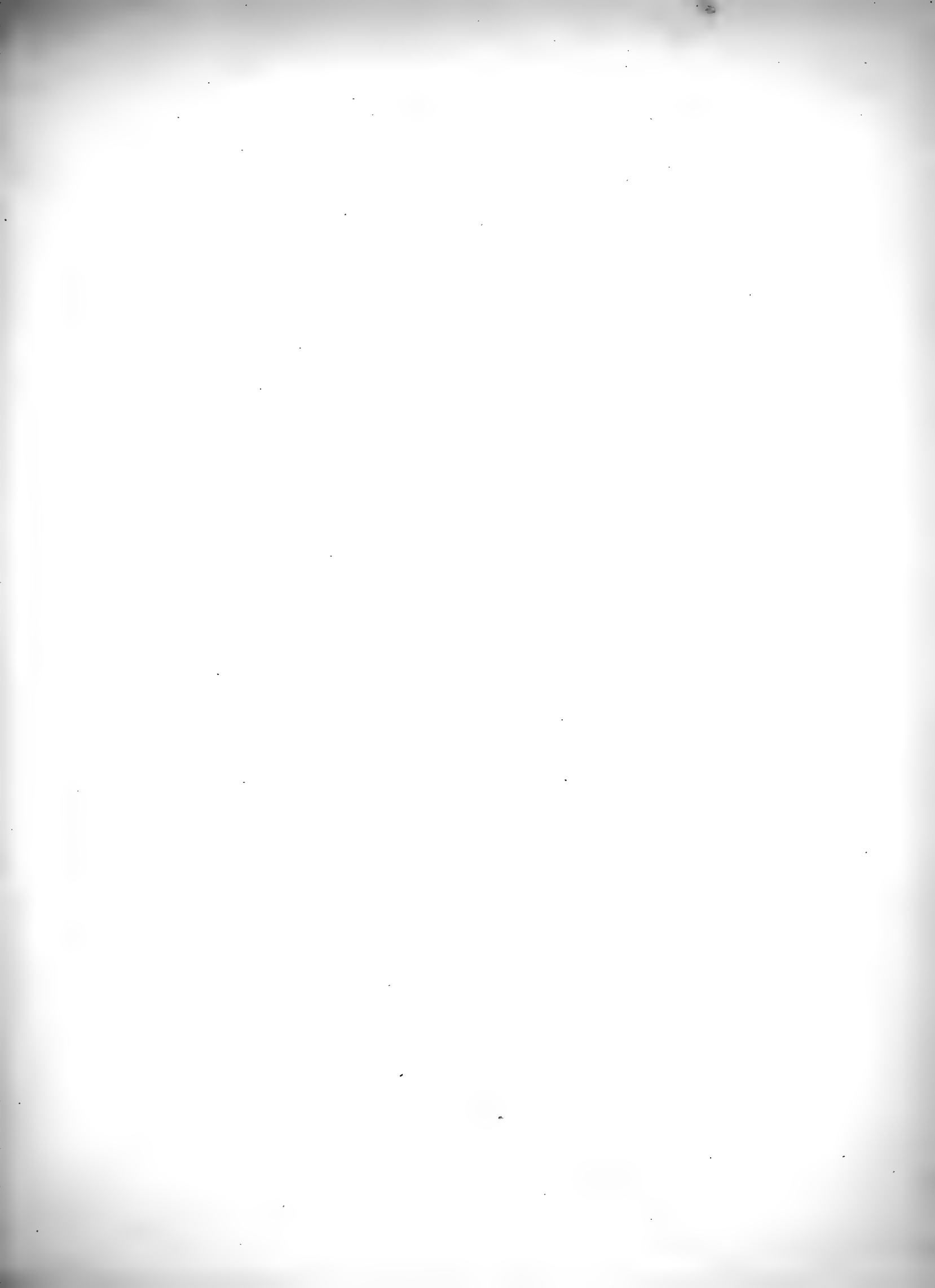
*Pelodes* apud Kaup, Natürl. Syst. p. 107 (1829).

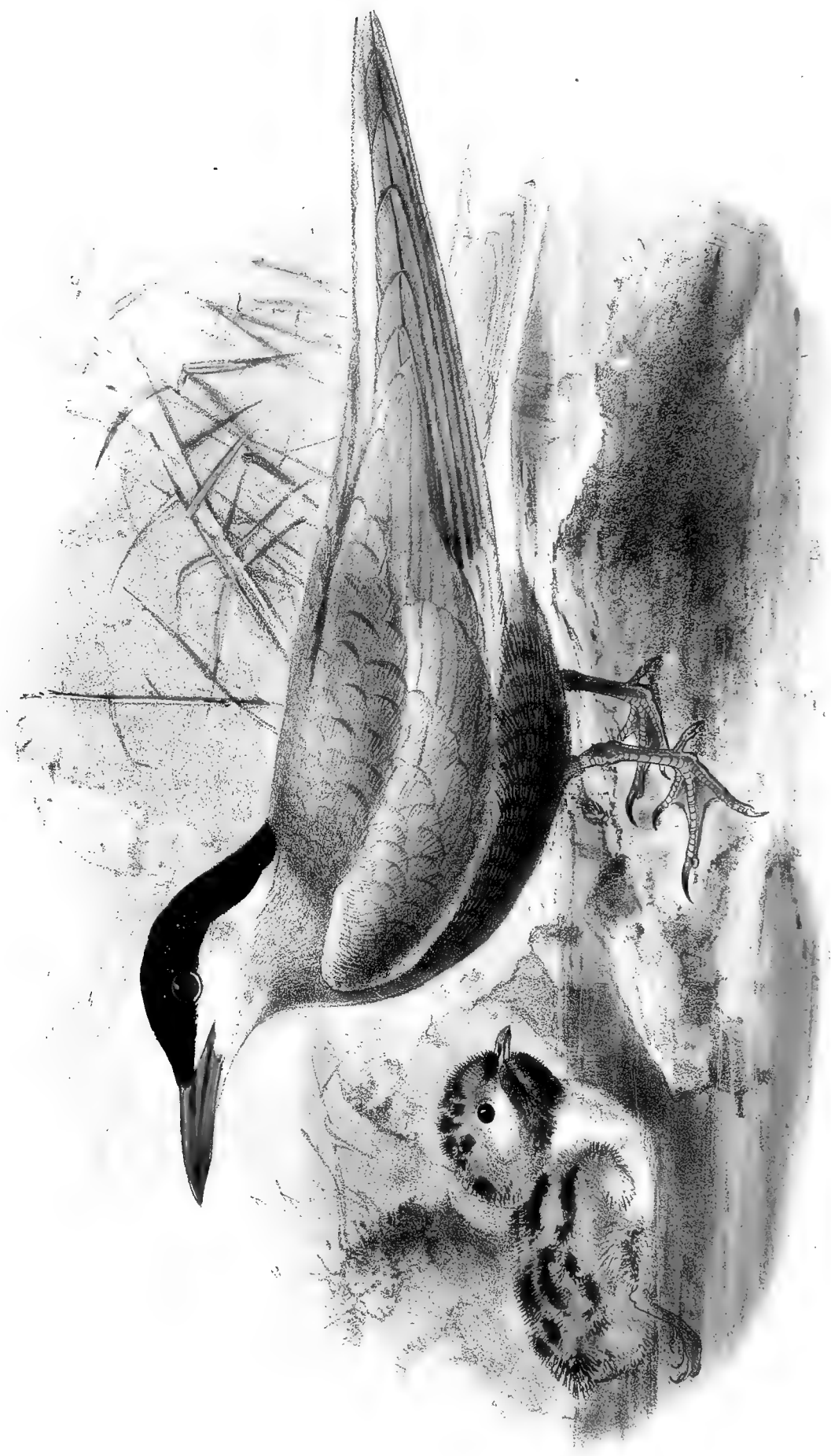
*Gelichelidon* apud Gray, Hand-l. of B. iii. p. 119 (1871).

ALTHOUGH closely allied to the genus *Sterna*, the Marsh-Terns differ in having a short tail, long slender toes connected by deeply incised webs, as well as in general coloration. This genus is represented in the Palæarctic, Ethiopian, Oriental, Australian, Nearctic, and Neotropical Regions, three species being resident in the Western Palæarctic Region. They are tame and confiding, in their flight and general movements closely resembling the common Terns; but they frequent inland marshy localities more than the sea-coast. They breed in large marshes, making a tolerably well-constructed nest of grass and marsh-plants, in which they deposit three eggs, ochreous-clay or olivaceous-ochreous in colour, closely blotched and spotted with purplish grey and blackish brown.

*Hydrochelidon nigra*, the type of the genus, has the bill about as long as the head, nearly straight, tapering to a fine point, nasal groove rather long, the nostrils basal, direct, oblong; wings long and pointed, the first quill longest; tail rather short, much shorter than the closed wings, tolerably deeply forked; feet short, the tibia bare for a considerable distance; tarsus short, compressed, anteriorly scutellate; hind toe small; anterior toes slender, connected by deeply emarginate webs which scarcely reach beyond the centre of the toe; claws long, slender, moderately curved, rather obtuse.







J G Keulemans lith

WHISKERED TERN  
HYDROCHELIDON HYBRIDA

M & N Hanhart imp





J. O. Keulemans lith

WHISKERED TERN.  
WINTER PLUMAGE & YOUNG.

M. A. N. Hanhart imp

## HYDROCHELIDON HYBRIDA.

(WHISKERED TERN.)

- Sterna hybrida*, Pall. Zoogr. Rosso-As. ii. p. 338 (1811).  
*Sterna leucopareia*, Natt. in Temm. Man. d'Orn. ii. p. 746 (1820).  
*Sterna javanica*, Horsf. Trans. Linn. Soc. xiii. p. 198 (1822).  
*Sterna grisea*, Horsf. tom. cit. p. 199 (1822).  
*Viralva indica*, Steph. in Shaw's Gen. Zool. xiii. i. p. 169 (1825).  
*Viralva leucopareia* (Natt.), Steph. tom. cit. p. 171 (1825).  
*Sterna delamottei*, Vieill. Faun. Fr. p. 402 (1828).  
*Pelodes*, Kaup (*Sterna leucopareia*, Natt.), Natürl. Syst. p. 107 (1829).  
*Hydrochelidon leucopareja* (Natt.), C. L. Brehm, Vög. Deutschl. p. 797 (1831).  
*Sterna similis*, Gray & Hardw. Ill. Ind. Zool. i. pl. 70. fig. 2 (1832).  
*Hydrochelidon fluviatilis*, Gould, Proc. Zool. Soc. 1842, p. 140.  
*Hydrochelidon hybrida* (Pall.), G. R. Gray, Gen. of B. iii. p. 660 (1846).  
*Hydrochelidon grisea* (Horsf.), G. R. Gray, tom. cit. p. 606 (1846).  
*Hydrochelidon similis* (Gould), G. R. Gray, tom. cit. p. 606 (1846).  
*Hydrochelidon javanica* (Horsf.), G. R. Gray, tom. cit. p. 606 (1846).  
*Hydrochelidon indica* (Steph.), G. R. Gray, tom. cit. p. 606 (1846).  
*Hydrochelidon leucogenys*, C. L. Brehm, Vogelfang, p. 350 (1855).  
*Hydrochelidon nilotica*, C. L. Brehm, Vogelfang, p. 351 (1855).  
*Hydrochelidon meridionalis*, C. L. Brehm, Vogelfang, p. 351 (1855).  
*Hydrochelidon delalandii*, Bp. Compt. Rend. xlii. p. 773 (1856).  
*Hydrochelidon leucopareia* (Natt.), Gould, Handb. B. Austr. ii. p. 406 (1865).  
*Sterna innotata*, Beavan, Ibis, 1868, p. 404.  
*Pelodes hybrida* (Pall.), Gurney in Anderss. B. of Damara L. p. 362 (1872).  
*Sterna leucoptera*, Buckley, Ibis, 1874, p. 391, *laps. cal.*  
*Pelodes delalandii* (Bp.), Gray, Hand-l. of B. iii. p. 122 (1871).  
*Pelodes indica* (Steph.), Gray, tom. cit. p. 121 (1871).  
*Pelodes fluviatilis* (Gould), Gray, tom. cit. p. 122 (1871).  
*Gelichelidon innotata* (Beavan), Gray, tom. cit. p. 119 (1871).

*Hirondelle de mer moustac*, French; *Rondine di mare piombata*, Italian; *Cirleua*, Maltese;  
*Mershik*, Moorish; *weissbärtige Seeschwalbe*, *bleigraue Seeschwalbe*, German.

*Figuræ notabiles.*

Werner, Atlas, *Palmipèdes*, pl. 7; Fritsch, Vög. Eur. taf. 54. fig. 1; Naumann, Vög. Deutschl. taf. 255; Gould, B. of Eur. pl. 424; id. B. of G. Brit. v. pl. 77.

♂ *ad. ptil. æst.* pileo, nuchâ et collo postico nitidè nigris; corpore, alis et caudâ suprâ schistaceo-cinereis;

mento et capitis lateribus albis, gulâ et gutture cinereis, corpore reliquo subtùs saturatè cinereo, abdomine saturatè fumoso-cinereo : alis et caudâ subtùs cum subcaudalibus albis : rostro saturatè sanguineo : iride fuscâ : pedibus pallidiùs sanguineis.

*Ad. ptil. hiem.* corpore suprâ pallidiore : subtùs ubique albo, fronte albâ, pileo albo nigro notato, et nuchâ, cum collo postico, nigro et albo immixtis.

*Juv.* fronte albâ : pileo postico, nuchâ et collo postico sordidè nigricantibus albo notatis : corpore suprâ pallidè schistaceo-cinereo, nigro conspicuè notato : corpore subtùs albo : rostro rufescenti-fusco, ad basin sanguineo : iride fuscâ : pedibus rufescenti-fuscis.

*Adult Male in summer* (Seville, 10th June). Crown and nape glossy black ; entire upper parts ashy grey, rather darker than in the common Tern ; upper surface of the tail similarly coloured ; quills blackish grey on the half of the inner web nearest to the shaft and towards the tip, the inner quills rather lighter than the back on the outer web ; chin and sides of the head below the eye, including the lower edge of the eyelid, white ; rest of the throat ashy grey, gradually darkening on the breast, and on the abdomen becoming blackish grey ; under surface of the wings and tail and under tail-coverts white ; bill blood-red ; iris dark brown ; legs blood-red, rather lighter than the bill. Total length about 10 inches, culmen 1·45, wing 9·2, tail 3·4, outer tail-feathers 0·7 longer than the central ones, tarsus 0·9.

*Adult Female.* Resembles the male, but appears, as a rule, to have the bill a trifle more slender.

*Adult in winter* (Colombo, 15th December). Upper parts lighter than in the summer dress, the black hood wanting ; forehead white ; crown white, marked with black, and the hind neck black and white intermixed ; entire underparts pure white ; soft parts as in the summer plumage.

*Young* (Valencia, 26th July). Forehead and fore part of the crown white ; rest of the crown, nape, and hind neck dull blackish, strongly marked with white ; upper parts as in the winter dress, but strongly blotched with blackish, especially on the inner secondaries ; entire underparts pure white ; iris dark brown ; bill reddish brown, at the base blood-red ; legs reddish brown.

*Young in down* (S. France). Differs from the young of *H. nigra* in being larger ; the upper parts are lighter in colour, and more sandy yellowish in tinge, and the lower throat and abdomen are pure white.

THE range of this Tern is extensive ; for it is found throughout Southern Europe, in Africa as far south at least as Damara Land, and in Asia it is found in India, and off the coasts of China, throughout the Malayan region down to Australia. It has straggled as far north as Great Britain, where, however, it is extremely rare. Yarrell, who first recorded it as a British species, cites only one occurrence, at Lyme Regis, in Dorsetshire, in August 1836 ; one was, Mr. Gurney states, obtained at Hickling Broad, in Norfolk, on the 17th June, 1847 ; Mr. Rodd records one occurrence near Trescoe Abbey, Cornwall, in August 1851 ; and Mr. Gatcombe one near Plymouth in May 1865. It has not been met with in Scotland ; and Thompson cites only one instance of its occurrence in Ireland, a specimen now in Mr. Warren's collection having been obtained in Dublin Bay.

It has not been met with in Norway, Sweden, or Finland ; nor does it occur in Northern Russia or North Germany. Mr. A. Benzon writes to me stating that he can find no authentic

instance of its occurrence in Denmark, though Kjærbølling states that in some seasons it has been found as far north as Schleswig and Holstein. Naumann says that it straggles but rarely to Germany, and that several were seen and killed at Brunsbüttel, in Southern Dittmarschen, in the summer of 1824, and that a young bird in a hungered condition was shot on the Schlei, in Schleswig, on the 16th December, 1822, the thermometer being then 5° Réaumur below freezing-point. It does not appear to have been met with in Holland or Belgium; and in France it occurs as a rare straggler, except in the southern provinces. Baillon is said to have obtained it in Picardy; and a few pairs still breed in the Camargue. M. A. Lacroix says that it is rare in the French Pyrenees, and he only knows of one occurrence, near Braqueville, south of Toulouse, on the 16th April, 1872. Professor Barboza du Bocage includes it in his list of the birds of Portugal; and in Spain it is common during the breeding-season. I met with it near Barcelona and Valencia in May; and Lord Lilford, Colonel Irby, and Mr. Howard Saunders all agree in stating that it breeds numerously in the marismas. Colonel Irby remarks that it is seen near Gibraltar only on migration, arriving about the middle of April, and soon passing on to its breeding-haunts. In Italy it seems rare, although one specimen at least has been obtained at one time or another in nearly every province, always in the spring of the year. There is a Sicilian-killed specimen in the Museum of Syracuse; and another has recently been obtained at Girgenti; but it has not been recorded from Sardinia. Mr. C. A. Wright has sent to me for examination several specimens obtained in Malta, where it occurs, he says, in the spring, summer, and autumn, but is not common. It straggles to Southern Germany; and Dr. A. Fritsch states (J. f. O. 1872, p. 373) that it breeds at Pardubic. It is common in the marshes of Hungary; and Messrs. Danford and Harvie-Brown say that in Transylvania several were killed in the Strell valley in June 1863, and that Herr Buda Ádám has shot it near Hátzeg. Dr. O. Finsch states that it is somewhat rare on the Danube; and Dr. Krüper says that it arrives in Greece about the middle of April, and soon moves further north. He adds that he is unaware if any remain to breed; but it certainly does not breed on the lagoons of Missolonghi. Von der Mühle, however, states that it breeds in considerable numbers in some of the marshes of Greece, but that he did not obtain its eggs; and Lord Lilford says that it breeds in the marshes of Durazzo. It is found in Turkey and the countries skirting the Black Sea. In Southern Russia it is very generally distributed, and is common on the Lower Volga. According to Professor von Nordmann it is abundant in Bessarabia and in the interior of the other South-Russian provinces, remaining in its breeding-haunts until October. In Asia Minor it was met with near Smyrna by Dr. Krüper, who remarks that it does not remain to breed there; but Canon Tristram says that it breeds in the marshes of Huleh, in Palestine. In North-east Africa it is common, and is, Captain Shelley writes (B. of Egypt, p. 301), "a very abundant species on the Nile, ranging throughout Egypt and Nubia. I met with small flocks on several occasions as far up as El Kab, and on the 1st of May shot several at How. In the Delta and the Fayoom they are extremely abundant, and by no means shy, often flitting gracefully backwards and forwards over the small ponds close to the villages." Von Heuglin says that it is common throughout the year in Egypt and Nubia, and doubtless breeds there. In December he obtained one on the Upper Bahr-el-Abiad, and another on the Gazelle River in February. Loche records it as common in Algeria; and Mr. A. von Homeyer states that it is certainly one of the most numerous species on Lake Halloula; but

Favier says that "it is scarce near Tangier, and seen only on passage during April, returning south in August. Immense numbers are found breeding at the lakes of Ras Dowra." I find but scanty records of its occurrence on the west coast of Africa. Mr. Andersson says (B. of Damara L. p. 362) that he "obtained a specimen of this Tern at Ondonga on the 6th February. It was circling for some time round a vley in company with another; these and another seen on the Great Flat a few days since are the only individuals I have yet met with." Mr. E. L. Layard does not record it from the Cape colony; but Mr. Howard Saunders (P. Z. S. 1876, p. 641) says that it occurs abundantly in South Africa in winter.

To the eastward the present species is found as far as Formosa. De Filippi found it in great abundance at Enzeli, on the Caspian; and Mr. Blanford says that it probably inhabits Persia, but neither he nor Major St. John obtained it there.

Mr. A. O. Hume says that he met with it occasionally on the inland lakes of Sindh, but that it was nowhere numerous. He was, however, assured by the fishermen that it breeds there. Dr. Henderson writes (Lahore to Yarkand, p. 301) that it "was very common in Kashmir in June. The birds were breeding, and many nests were taken, in a marsh close to Srinagar, about a mile from the Visitors' Reach, and on the opposite side of the river. The nests were made of green rushes, placed in amongst rushes, reeds, and floating weeds, and were very scanty." Dr. Jerdon states (B. of India, ii. p. 837) that it is "exceedingly abundant in India, frequenting marshes, tanks, and rivers, usually preying on aquatic food, not unfrequently hunting over fields, beds of reeds, and marshy ground, where it captures grasshoppers, caterpillars, and other insects. During the night, in some parts of the country, it roosts on thick beds of reeds, congregating in vast numbers. Mr. Holdsworth met with it in Ceylon, where it is common, and, he believes, resident; and Lieut. W. Vincent Legge remarks (Ibis, 1875, p. 408) that it leaves the west coast during the S.W. monsoon, as far as his experience goes, entirely; and he is therefore of opinion that it breeds on the south-east coast. Mr. Blyth records it from Arakan and Tenasserim; Dr. Dybowski says that it is common in Dauria; and Mr. Swinhoe records it as not uncommon on the marshy lands of S.W. Formosa, but adds that he has not observed it in China, though it doubtless occurs there. It is found throughout the Malay region down to Australia. Lord Tweeddale received a specimen from Dr. Meyer, obtained by him at Luzon in February; and Von Martens states (J. f. O. 1866, p. 30) that he found a Tern very abundant on the Passig river and in the Bay of Manilla, which he identifies with *H. fluviatilis*, Gould, and which is therefore, in all probability, referable to the present species. Mr. Gould writes (Handb. B. Austr. ii. p. 406):—"Wherever lagoons of any extent have been discovered in the interior of Australia the present species has been found enlivening the scene. I frequently observed it in the reaches of the rivers Mokai and Namoi; and both Sturt and Hume mention it as frequenting many parts of the country visited by them; I have also seen specimens from Swan River; it is evident, therefore, that it has a wide range of habitat."

The Whiskered Tern does not inhabit the Nearctic or Neotropical Regions. There is a specimen in the British Museum marked as obtained at Barbadoes; but I cannot but think that there is an error as regards the locality whence it came.

In habits the Whiskered Tern much resembles its allies the White-winged and Black Terns; and, like these, it frequents the marshes and inland sheets of water in preference to the sea-coast,

being found only near the sea during passage, or when it does not find any more suitable locality in the immediate vicinity. Nor does it appear to like clear water, but affects marshy places where there is an abundance of mud, and which are tolerably well covered with rushes, sedge, and aquatic vegetation of various sorts, and especially where here and there there are small open pieces of shallow water, and the bottom is soft and muddy. It is seldom seen swimming on the surface of the water, but more frequently on the wing; for it flies with extreme buoyancy, and appears to be untiring in its flight. When resting, it seats itself on one of the small patches of partially dry land in the marsh, or on the masses of tangled aquatic herbage which form small floating rafts in the water. It is stated by some observers to walk with more ease than its allies.

It feeds on small fishes, aquatic insects of various kinds, dragonflies, and leeches. Canon Tristram, who found it breeding in Algeria in the nests of the Eared Grebes, says that they were then feeding chiefly on a large hairy caterpillar which covered the neighbouring marshes in thousands, and adds that they were also plunging into the lake in quest of the frogs and newts with which it abounds. I have never had an opportunity of inspecting a breeding-colony of this Tern, and am indebted to Lord Lilford for the following notes on the nidification and habits:—"We found this Tern breeding in great numbers in company with *Sterna nigra* on the small lakes of Santa Olaya, in the Coto de Doñana, during the first fortnight of May 1872. The nests are merely a few scraps of weed pulled together and placed on the open water, with no attempt at concealment; in almost every instance the water had penetrated the bottom of the nest, and the eggs were quite wet. These Terns appeared at that time to be feeding principally upon leeches and dragonflies. In one instance we found four eggs in a nest; but the usual complement is three. The cry of this species much resembles that of *Hydrochelidon nigra*, and still more that of *Hydrochelidon leucoptera*; but there is a difference. It was amusing to see these birds dash in a body after the Harriers (*Circus æruginosus* and *C. cineraceus*), which are abundant in the above-named locality, and no doubt destroy great numbers of the eggs and young of the Terns." Canon Tristram, who found this Tern breeding on the large lakes in Algeria, says that he found a whole colony breeding in the nests of the Eared Grebes, without having at all repaired the nests, which could only have been evacuated by their constructors a few days previously, as he saw hundreds of young Eared Grebes paddling about and diving in the open lake with their parents. Mr. A. Anderson gives (*Ibis*, 1872, p. 82) some interesting notes on the nidification of the present species in India, which I transcribe as follows:—"When stationed at Fyzabad, Oudh, in 1867, I went out one July morning with my friend Mr. Naher, of the Oudh Commission, on a naturalizing excursion; and we had hardly gone two miles beyond the town when our attention was attracted by the outcry of a vast assembly of these handsome Terns, that were flying over a jheel or swamp about a mile in circumference, and within a stone's throw of the main road and of a village which overlooked the piece of water.

"My friend, who had a pair of glasses in his hand, called out that they were building nests on the swamp, which was one mass of tangled weeds and aquatic creepers &c. I was, of course, somewhat incredulous of their building floating nests, as Jerdon mentions that they lay on the 'churs' of the Ganges, *i. e.*, sandbanks. We were, however, soon assured that they were all

actively engaged in carrying long wire-like weeds (some of them 2 feet long) from different parts of the jheel, and making huge floating nests on the surface of the water.

"On the 7th July we again visited the place, taking a small canoe with us, which was pushed through the rushes and weeds with the greatest difficulty; and we were soon rewarded with as many eggs as we could carry home.

"Each nest contained one, two, or three eggs, though possibly four may be the proper number, had we allowed the birds sufficient time to lay the full complement.

"The circumference of some of the nests I measured ranged between  $3\frac{1}{2}$  and 4 feet, and they were about 4 inches thick. They were composed entirely of aquatic plants, and so interwoven with the growing creepers that it was impossible to remove them without cutting at the foundation of the structure."

Eggs of this Tern in my collection from Hungary and Spain have the ground-colour greyish buff, ochreous buff, or stone-buff with a greenish tinge, and are marked and blotched with purplish grey underlying shell-markings and blackish brown surface-blotches. Most of the eggs I possess are more profusely marked at the larger end; and one has the dark markings almost confined to that end of the egg. In size they vary from  $1\frac{1}{4}$  by  $1\frac{4}{10}$  to  $1\frac{2}{4}$  by  $1\frac{5}{10}$  inch.

The specimens figured are, on the first Plate, an adult bird in full breeding-dress and a young bird in down, and on the second Plate an adult male in full winter dress and a young bird in immature plumage, all being the specimens above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀. Barcelona, Spain, May 4th, 1866 (*H. E. D.*). *b*, ♂, *c*, ♀. Seville, May 1st, 1870 (*Colonel Irby*). *d*, ♂. Seville, June 10th, 1869 (*H. Saunders*). *e*, ♂. Malta, May 23rd, 1865 (*C. A. Wright*). *f*, ♀. Guriew, Russia, May 22nd, 1861 (*Sabanäeff*).

*E Mus. Howard Saunders.*

*a*, ♂. Coria del Rio, April 29th, 1868 (*H. S.*). *b*, ♀. Near Seville, May 10th (*H. S.*). *c*, ♂, *d*, ♀. Coto de Doñana, June 10th (breeding). *e*, *jun.* Coto de Doñana, July (*Forrester*). *f*, *ad.* Albufera de Valencia, July 26th (*Martin*). *g*, *h*, *jun.* Albufera and Catarroja, July 26th, 1873 (*Martin*). *i*, *ad.* Cashmere lakes, breeding (*Colonel Delmé-Radcliffe*). *j*, ♀. Futtehghurh, India, July 7th. *k*, ♀ *jun.* "Thirty-five days old," Futtehghurh, October 1st (*A. Anderson*). *l*, ♂. Hambantotta, Ceylon, July 1st, 1873 (*W. Vincent Legge*). *m*, ♀. Colombo, Ceylon, December 15th, 1869 (*W. Vincent Legge*). *n*, ♂, *o*, ♀. Togoan Island. *p*, *ad.* Celebes, all three winter (*Dr. A. B. Meyer*). *q*, *ad.* Breeding-plumage, Lake Elphinstone, North Australia (*Bowen*). *r*. Queensland (*Gould*). *s*. Queensland, winter plumage. *t*, ♀ *ad.* Egypt, April (*Captain Shelley*). *u*. Lake Ngami, S. Africa (*Anderssen*). *v*. Lake Ngami, S. Africa (*Chapman*). *w*, ♂. Transvaal, December 9th, 1873 (*T. E. Buckley*). *x*, *pull.* South France (*Ray*).

*E Mus. C. A. Wright.*

*a*, ♂. Malta, May 22nd, 1874 (*C. A. W.*).





J. J. Keulemans lith

M & N Hanhart imp.

WHITE-WINGED BLACK TERN.  
YOUNG AND NESTLING





**WHITE WINGED BLACK TERN**  
HYDROCHELIDON LEUCOPTERA

## HYDROCHELIDON LEUCOPTERA.

(WHITE-WINGED BLACK TERN.)

*Sterna fissipes*, Pall. Zoogr. Rosso-As. ii. p. 338 (1811, nec Linn.).*Sterna leucoptera*, Schinz, in Meisn. & Schinz, Vög. der Schweiz, p. 264 (1815).*Hydrochelidon leucoptera* (Schinz), Boie, Isis, 1822, p. 563.*Viralva leucoptera* (Schinz), Steph. in Shaw's Gen. Zool. xiii. p. 170 (1825).*Hydrochelidon leucopteron* (Schinz), Bp. Comp. List, p. 61 (1838).*Hydrochelidon nigra*, G. R. Gray, Gen. of B. iii. p. 660 (1844-49, nec Linn.).*Hydrochelidon subleucoptera*, C. L. Brehm, Vogelfang, p. 350 (1855).*Hydrochelidon javanica*, Swinh. Ibis, 1860, p. 68 (nec Horsf.).*Hydrochelidon niger*, Severtz. Turk. Jevotnie, p. 70 (1873, nec Linn.).*Hirondelle de mer leucoptère*, French; *Mignattino ali-bianche*, Italian; *Cirlena*, Maltese; *weissflügelige Seeschwalbe*, German; *Hvitvingad Tärna*, Swedish.*Figuræ notabiles.*

Meisner & Schinz, *op. cit.* pl. 1; Werner, Atlas, *Palmipèdes*, pl. 8; Fritsch, Vög. Eur. taf. 54. fig. 7; Naumann, Vög. Deutschl. taf. 257; Sundevall, Svensk. Fogl. pl. 78. figs. 2, 3; Gould, B. of Eur. pl. 423; id. B. of G. B. v. pl. 76.

*Ad. ptil. æst.* capite, collo, dorso, scapularibus, secundariis intimis et corpore subtus, subcaudalibus exceptis, nigris: dorso vix fumoso lavato: primariis nigricantibus cinereo tinctis, in pogonio interno extus canis, rhachibus albis, secundariis externis canis, in pogonio interno et ad apicem saturationibus: tectricibus alarum minimis albis, medianis et majoribus pulchrè cinereis: uropygio, caudâ, supra- et subcaudalibus albis: subalaribus nigris, extus albo notatis: rostro nigricanti-rubro: iride fuscâ: pedibus rubris.

*Ad. ptil. hiem.* *H. nigræ* similis, sed supracaudalibus et uropygio fere albis.

*Adult Male in spring* (Biskra). Head, neck, back, scapulars, and innermost secondaries, and entire underparts, excepting the under tail-coverts, deep black; primary quills blackish grey, fading to greyish white on the outer portion of the inner webs, except on the terminal portion, shafts of the feathers white; secondaries light French grey, rather darker on the inner web and the terminal portion; lesser wing-coverts and edge of the wing white, larger coverts French grey; tail, upper and under tail-coverts pure white; under wing-coverts black and blackish grey, the edge of the wing mottled with white; beak reddish black; iris dark brown; legs and feet vermilion-red with a coral tinge. Total length about 9.5 inches, wing 8.2, tail 3.0, tarsus 0.8, middle toe with claw 0.9.

*Adult Female* (Sarepta, May). Resembles the male, but is, if any thing, a trifle less deeply coloured.

*Winter plumage.* Differs from *H. nigra* in the same stage of plumage merely in the rump and upper tail-

coverts much lighter, indeed almost white, and may be distinguished also by its longer tarsus and foot, as well as by its stouter bill.

*Young* (Volga, August). Posterior portion of the crown, a patch on the side of the head, and one on the hind neck dark sooty grey, the feathers with lighter margins, the patch on the hind neck with brownish markings; rest of the head, neck, and entire underparts pure white; back and scapulars blue-grey, broadly tipped with blackish grey; wings as in the adult in winter, but the wing-coverts tipped with light reddish brown; rump and upper tail-coverts white; tail light French grey, becoming darker towards the tip.

*Nestling in down* (Volga, July). Upper parts warm reddish buff, boldly marked with black on the crown, nape, back, wings, and rump; underparts greyish buff with a sooty tinge, marked with sooty grey on the upper throat; space round the eye nearly white.

THE range of this Tern is extremely wide; for in Europe, though it is met with chiefly in the southern countries, yet it straggles as far north as Great Britain and Scandinavia. In Asia it is found as far east as China, and southward to Australia and New Zealand; and it has even been recorded from North America.

In England it is only known as a rare straggler, and has not, so far as I can ascertain, been known to breed with us. Almost all the occurrences I find recorded have taken place on the east coast of England, chiefly in Norfolk. Mr. Stevenson informs me that one, which was obtained at Horsey Mere, Norfolk, on the 17th May, 1853, is in the collection of Mr. Rising; Mr. Gould states in his 'Birds of Great Britain' that two were obtained at Coventry in June 1857; Mr. Stevenson possesses one which was obtained at Hickling Broad on the 27th June, 1867; and Mr. Howard Saunders says that Mr. Westlake, of Ilfracombe, possesses one which was obtained in the harbour of that town on the 2nd or 3rd November, 1870. I may also add that Mr. Booth, of Brighton, has shown me four examples shot by him at Breydon, in May 1871, and six shot at Hickling Broad, in May 1873, when, he informs me, he saw many others, and could have shot more had he wished to do so.

It does not appear ever to have been obtained in Scotland; but Thompson records two instances of its occurrence in Ireland—one on the Liffey, near Pigeon-house Fort, Dublin Bay, in October 1841, and a second killed at the same place, but the date of capture is not given.

In Northern Europe it is, generally speaking, a rare bird, only met with here and there at rare intervals. It does not appear to have been met with in Norway, but has occurred in Sweden, where, Nilsson states (Skand. Faun. Fogl. ii. p. 324), that it has only once been obtained in Sweden, near Lund, where a male was shot at Getinge-å on the 1st June, 1835. It has not been met with in Finland; nor have I any data from Mr. Sabanäeff respecting its occurrence in Central Russia. Borggreve writes that he knows only of two occurrences in North Germany, one at the Hiddensee and one in Saxony; but Naumann writes (Vög. Deutschl. x. p. 222) that it is "rare in Silesia, but has been now and then met with in Lausitz, and has even reached Pomerania. At Ahlsdorf, near Herzberg in Saxony, Herr B. von Seyffertitz has on several occasions seen and killed single birds, and in 1832 as many as five individuals, in company with Black Terns." Mr. Jäckel states (J. f. O. 1860, p. 300) that he has found it breeding near Hochstadt in Oberfranken. It is included as occurring in Denmark by Professor

Kjærbølling, who says that he saw three at Trappeskov, on Ærø, but he did not shoot one. It is stated by Godron to have occurred in Lorraine; and Messrs. Degland and Gerbe say that it is only an accidental visitant to the northern departments of France during passage, but is tolerably common in the southern parts of France. Baillon obtained it in Picardy and in the provinces bordering the Mediterranean, where it occurs in greater or less abundance every year, principally in spring. Colonel Irby did not meet with it when collecting in Southern Spain; but Mr. Howard Saunders writes (*Ibis*, 1871, p. 399) as follows:—"Only observed once in the 'marisma;' but eastwards it becomes more abundant in spring, though I do not think it breeds in any part of the peninsula. At the Albufera of Valencia it was abundant in May; and I also obtained it near Palma." I saw it exposed for sale in the market in Barcelona; and Herr A. von Homeyer met with it in the Balearic Isles, and says (*J. f. O.* 1862, p. 432) that, although it inhabits the Prat only in small numbers, it breeds there.

Passing eastward, again, I find it recorded by Bailly as found in the portions of Savoy watered by the Rhine and the Isère. It occurs regularly in spring, though but seldom in autumn, in many parts of Italy; and in Sicily it is even common at times, especially near Catania and Syracuse. In Sardinia it seems to be rarer. Mr. C. A. Wright, who has lent me several specimens for examination, says that it visits Malta in the spring and autumn; and Lord Lilford found it common in April and May at Corfu. It is stated by Dr. Krüper to occur in Greece only on passage; but Von der Mühle says that it breeds there. It certainly breeds in Southern Germany and Hungary. Dr. A. Fritsch states (*J. f. O.* 1872, p. 374) that it formerly appeared as a rare straggler near Pardubic, and there are very fine Bohemian-killed specimens in the collection of Herr Hromadko. According to Ostrdal it is said to breed in the same localities as the Whiskered Tern. I was told by Herr von Frivaldsky that it breeds on the borders of the Neusiedler lake; and he gave me eggs procured with the old birds in Hungary. It is doubtless found on the Southern Danube; but I have no definite data respecting its occurrence there. In Southern Russia it is said to be common in some parts; and numbers are killed by collectors on the Southern Volga. Mr. H. Goebel states (*J. f. O.* 1871, p. 151) that he twice observed a pair in the Uman district, and took an egg on the 10th June, 1868. It breeds, he says, not uncommonly near Kieff, and there are many nests and skins in the Museum of that town. Professor von Nordmann writes that it is quite common in Abasia, Mingrelia, and Bessarabia. I find but little said respecting its occurrence in Asia Minor; but Lord Lilford, who obtained it at Cyprus, writes to me as follows:—"We saw and shot a few of this species in the marshes near Limasol in Cyprus, and also near the ruins of Paphos. First observed May 7th, 1875. The stomachs of those we obtained were crammed full of small winged insects and a few minute shells." Canon Tristram obtained one specimen in Palestine, and says that it is apparently a straggler at Jaffa. Von Heuglin says that he believes it is a resident in North-east Africa, and certainly breeds in the Delta and along the Nile southward to near Wady-Halfa. In the lagoons of Lower Egypt he found it in full summer plumage in April and May; and in July he saw old birds with young, and young in changing-dress, in Upper Egypt and Northern Nubia. It straggles to the Blue and White Nile; and Petherick obtained it from Kordofan. Loche says that it is common in Algeria, both on the coast and on the great lakes, where it breeds; and Colonel Irby states that he only knows of a single instance of its occurrence near

Tangier, one having been shot in May 1869, at Sharf-el-Akab. Dr. Hartlaub does not include it in his list of birds found in West Africa, though he includes the Black Tern; but it is certainly found in Damara Land, whence a specimen was sent by Mr. Andersson, who writes (B. of Damara L. p. 363) as follows:—"I have never seen this Tern on the sea-shore; but it is common on many inland fresh-water lakes, and during the wet season hunts over the temporary rain-pools." I find no other record of its occurrence in South Africa, except that Mr. Ayres sent one from the Transvaal, which he says (Ibis, 1871, p. 267) was shot on the 26th June, 1869, whilst hovering over the marsh near Potchefstroom; and Mr. T. E. Buckley also writes (Ibis, 1874, p. 391), respecting its occurrence in that part of Africa, as follows:—"Seen in Transvaal, on our way down, in flocks frequenting the marshes and lagoons."

To the eastward it is met with as far as China. Mr. Blanford, in his work on the ornithology of Persia, merely says that it is found on the Caspian, where De Filippi also records it as extremely abundant. Severtzoff states (Turk. Jevotnie, p. 70) that "*H. niger*" breeds in Turkestan; and I have no doubt that the bird referred to under that name is the present species. It inhabits Siberia, and would appear to range much higher to the north there than in Europe; for Pallas states that it is found on the Ob and in Kamtschatka. Dr. Radde says that he found it most numerous on the Schilka in May 1857, and only saw five individuals on the steppes of the Tarei-nor; down the river, below the mouth of the Dseja, he adds, it was very rare. Von Schrenck only met with it once on the Lower Amoor, near Dshare, on the 30th July, and says that Mr. Maack obtained it near the mouth of the Ssungari on the 10th July. According to Mr. Swinhoe it occurs throughout China; but I find no record of its occurrence in Japan. Professor Schlegel includes a specimen from Northern Celebes, collected by Forsten, amongst those belonging to the Leyden Museum; and it has even been obtained in New Zealand and Australia. Mr. Buller (B. of N. Z. p. 287) says that Mr. D. Monro shot a pair on the Waihopai river-bed, in the Province of Nelson, on the 12th December, 1868; and he also adds that it has been obtained in Australia. According to Dr. Elliott Coues it has also occurred once in America; for Mr. Thure Kumlein obtained one in Wisconsin on the 5th July, 1873, in full breeding-dress.

In habits the present bird much resembles the Black Tern, with which species it frequently consorts, one or two pairs of the present species being sometimes found breeding in a colony of the Black Tern. In the full spring plumage, however, the present species may be easily distinguished from *Hydrochelidon nigra* by its black under wing-coverts, as well as by the white on the wing, and other differences, the first-named character being perhaps the most perceptible as the bird is on the wing overhead. Its voice is also different from that of the Black Tern, and is louder and harsher; so that it may be distinguished by that alone. It is a swifter and more agile bird in its flight than the Black Tern, being, it is said by those who have had opportunities of frequently watching it, the quickest of all the Terns in its movements whilst on the wing. As above stated, it is gregarious, and breeds in company not only with others of its own species, but with other allied Terns, selecting for the purpose of nidification swamps, often far inland and in almost inaccessible places. It is seldom seen swimming in the water, though (like many of its allies) it swims buoyantly and with ease. Nor does it often walk; for its short legs make that mode of progression somewhat difficult; but it may not unfrequently be seen sitting on some

elevated object. It is said to be shyer and more distrustful than its allies—though, should its breeding-haunts be invaded, it will sometimes dash down and strike at the intruder. It feeds on insects and their larvæ, as well as small fish, and sometimes on worms, but chiefly on water-insects, which it picks up from the surface of the water; but Naumann mentions that it occasionally visits grain-fields in the vicinity of the swamps it inhabits, and picks the insects off the ears of grain.

It breeds in almost inaccessible swamps, its eggs being deposited late in May or early in June, in a nest similar to that of the Black Tern—three, or very seldom four, being the usual number deposited. I possess eggs from Hungary which closely resemble those of the Black Tern; but, if any thing, the markings are rather more scattered, giving the egg a lighter appearance.

The specimens figured are, on the first Plate, an adult male in full plumage, together with a mottled female from the Volga, which is losing the winter dress and assuming the spring plumage, and on the second Plate a young bird of the year, together with the young in down, all being the specimens above described. The young bird of the year is from the collection of Mr. Howard Saunders; but the other three examples are in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Biskra, Algeria (*Fairmaire*). *b*. Malta, May (*C. A. Wright*). *c*. Malta, May 8th, 1867 (*C. A. W.*).  
*d*, *e*, ♂, *f*, *g*, *h*, ♀. Sarepta, May (*H. F. Möschler*). *i*, *pull.* Volga (*H. F. Möschler*).

*E Mus. C. A. Wright.*

*a*, ♂, *b*, *c*, ♀. Malta, May 1871 (*C. A. W.*).

*E Mus. Howard Saunders.*

*a*, ♂, *b*, ♀. Volga district, June 2nd. *c*, *juv.* Same place, August. *d*, *pullus.* Same place, July 1869 (*Möschler*). *e*, ♂. South Russia, May. *f*, ♀. Prat, Isle of Majorca, May 17th, 1870 (*H. S.*). *g*, ♂. Albufera de Valencia, July 25th, 1873 (*Martin*). *h*, ♂ *juv.* Transvaal, December 9th, 1873 (*T. E. Buckley*). *i*, *juv.* Bogos, Abyssinia (*Jesse*).

*E Mus. R. Swinhoe.*

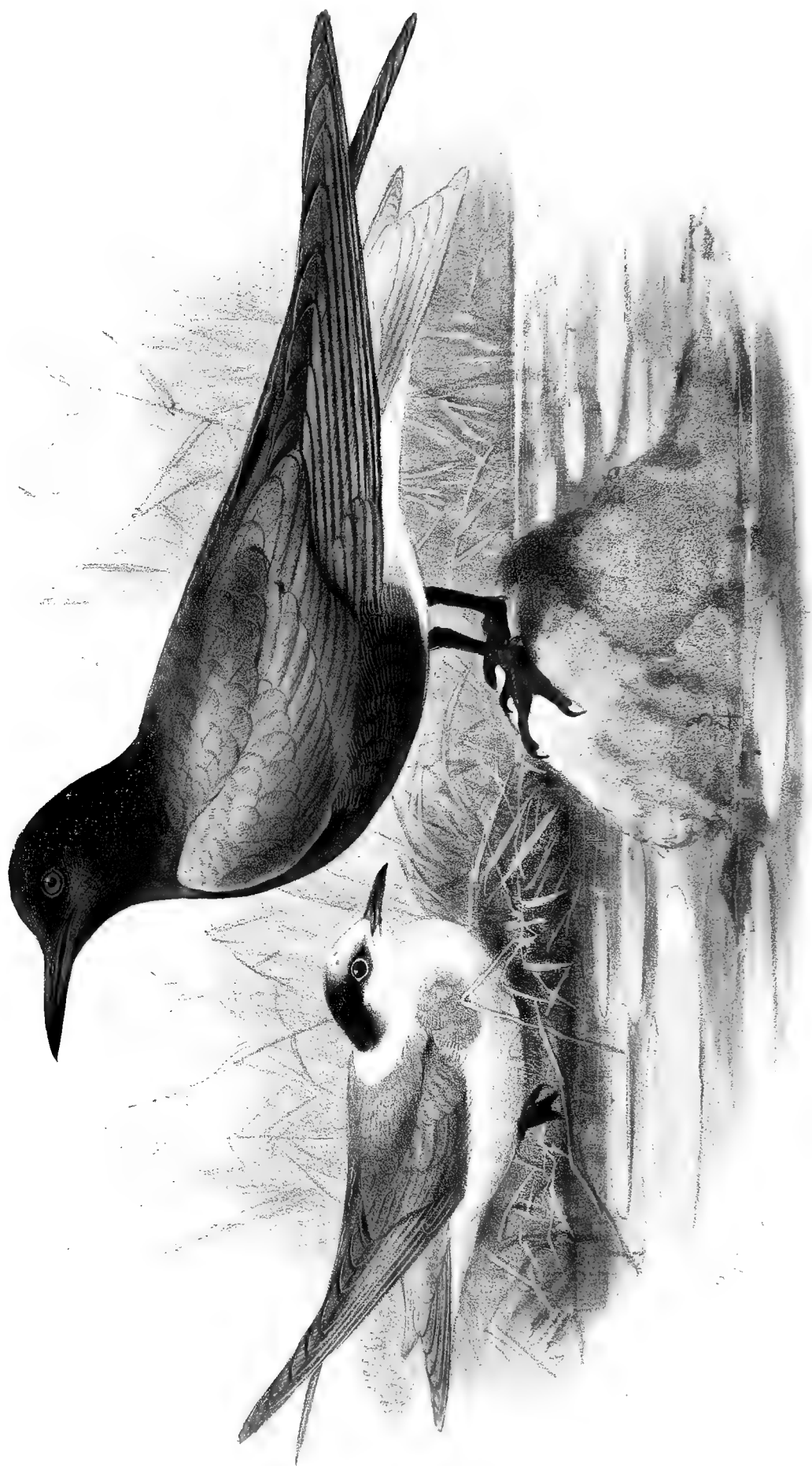
*a*, ♂. Amoy, China, May 1856. *b*, *ad.*, *c*, *juv.* Takoo, August 1860 (*R. S.*). *d*, *juv.* Celebes.

*E Mus. E. Booth.*

*a*, *b*, *c*, *d*. Breydon, May 1871. *e*, *f*, *g*, *h*, *i*, *k*. Hickling Broad, May 1873 (*E. B.*).







BLACK TERN  
HYDROCHELIDON NIGRA

## HYDROCHELIDON NIGRA.

(BLACK TERN.)

- Sterna nigra*, Briss. Orn. vi. p. 211, pl. xx. fig. 1 (1760).  
*Sterna nævîa*, Briss. tom. cit. p. 216, pl. xx. fig. 2 (1760).  
*Sterna nigra*, Linn. Syst. Nat. i. p. 227 (1766).  
*Sterna nævia*, Linn. tom. cit. p. 228 (1766, ex Briss.).  
*Sterna fissipes*, Linn. tom. cit. p. 228 (1766, ex Briss.).  
*Larus merulinus*, Scop. Ann. I. Hist. Nat. no. 108 (1769).  
*Sterna surinamensis*, Gm. Syst. Nat. i. p. 604 (1788).  
 ? *Sterna obscura*, Gm. op. cit. p. 608 (1788).  
*Sterna plumbea*, Wils. Am. Orn. vii. p. 83, pl. 60 (1813).  
*Hydrochelidon nigra* (L.), Boie, Isis, 1822, p. 563.  
*Viralva nigra* (L.), Steph. in Shaw's Gen. Zool. xiii. i. p. 167 (1825).  
*Anous plumbea* (Wils.), Steph. in Shaw's Gen. Zool. xiii. i. p. 142 (1825).  
*Hydrochelidon nigricans*, C. L. Brehm, Vög. Deutschl. p. 794 (1831).  
*Hydrochelidon obscura*, C. L. Brehm, op. cit. p. 795 (1831).  
*Hydrochelidon nigrum* (L.), Bp. Comp. List, p. 61 (1838).  
*Hydrochelidon fissipes* (L.), G. R. Gray, Gen. of B. iii. p. 660 (1849).  
*Hydrochelidon pallida*, C. L. Brehm, Vogelfang, p. 350 (1855).  
*Hydrochelidon surinamensis* (Gm.), Bp. Comptes Rendus, 1856, i. p. 773.  
*Hydrochelidon plumbea* (Wils.), Bp. ut suprâ.  
*Pelodes surinamensis* (Gm.), G. R. Gray, Hand-list, iii. p. 122. no. 11074 (1871).  
*Hydrochelidon lariformis*, Coues, B. of N.W. p. 704 (1874, ex Linn. ed. 10).

*Guifette noire*, French ; *Mignattino*, Italian ; *Cirleua*, Maltese ; *schwarze Seeschwalbe*, German ; *zwarte Zeezwaluw*, Dutch ; *Mose-Terne*, *Blaa-Terne*, *Sort-Terne*, *Sort-Kirre*, Danish ; *Sort-Terne*, Norwegian ; *Svart Tärna*, Swedish.

*Figuræ notabiles.*

Werner, Atlas, *Palmipèdes*, pl. 9 ; Kjærbo. Orn. Dan. taf. 40 ; Fritsch, Vög. Eur. taf. 54. fig. 6 ; Naumann, Vög. Deutschl. taf. 256 ; Sundevall, Svensk. Fogl. pl. 48. figs. 6, 7, pl. 78. fig. 1 ; Gould, B. of Eur. pl. 423 ; id. B. of G. Brit. v. pl. 75 ; Schlegel, Vog. Nederl. pl. 362 ; Audub. B. of Am. pl. 438 ; Wilson, Am. Orn. pl. 60.

*Ad. ptil. æst.* pileo, nuchâ et collo postico nitidè nigris : corpore et alis suprâ saturatè plumbescenti-cinereis : remigibus saturationibus, in pogonio interno ferè nigricantibus, remige extimo in pogonio externo nigro : caudâ plumbescenti-cinereâ : gulâ, gutture et corpore subtùs nigro-fuliginosis plumbescente tinctis : subcaudalibus albis : subalaribus albis vix griseo tinctis : rostro purpureo-nigro, iride fuscâ, pedibus nigro-fuscis vix purpureo tinctis.

*Ad. ptil. hiem.* fronte albidâ: pileo et nuchâ nigris, collo postico albo: corpore suprâ pallidè plumbescenti-cinereo: alis et caudâ ut in ptilosi æstivali, sed pallidioribus: gulâ, gutture et corpore subtùs albis.

*Juv.* præcedenti similis, sed corpore suprâ pallidè brunneo tincto, plumis versus apicem pallidè brunneo notatis: pectore lateraliter nigricante notato.

*Adult Male in summer* (Barcelona, 4th May). Crown, nape, and hind neck glossy black; entire upper parts dark blue-grey with a leaden tinge, the quills darker, nearly blackish on the inner web and in the first quill on the outer web also; tail short, moderately forked, coloured like the back; throat, sides of the head and underparts generally to the vent sooty black with a leaden tinge; under tail-coverts pure white; under wing-coverts white with a faint greyish tinge; beak purplish black; iris dark brown; legs blackish brown with a purplish tinge. Total length about 9 inches, culmen 1·3, wing 8·0, tail 3·25, tarsus 0·65.

*Adult Female* (Jutland). Undistinguishable from the male in plumage.

*Young* (Pagham, Sussex). Forehead dull white; a patch in front of the eye, crown, and nape black; hind neck white; upper parts dull ashy with a brownish tinge, the feathers being washed with dull light brown towards the tips; fore part of the back nearly black; wings and tail as in the adult, but rather duller; underparts white, the sides of the breast marked with dull blackish.

*Adult in winter.* Resembles the bird last described, but has the upper parts clearer grey and not marked with brown, and the dark markings on the sides of the breast are wanting.

*Young in down* (Jutland). Closely resembles the young in down of *H. leucoptera*, but has the throat marked with sooty blackish, and the sides of the face are not quite so light in colour.

THE present species inhabits Europe generally as far north as Scandinavia, ranging as far east in Asia as Turkestan, and occurring tolerably far south in Africa in winter. In America, where it is also found, it ranges from Canada down to Chili and Peru.

In Great Britain the present species is now only known as a somewhat rare straggler; and, so far as I can ascertain, it has ceased to breed in the United Kingdom. It occurs, however, on most parts of the coast during the seasons of passage. I have seen many specimens obtained on the coasts of Kent and Sussex; and it has been met with all along the south coast. Mr. Mansel Pleydell says that, according to Mr. Thompson, several have been killed on Lodmoor, in Dorsetshire. The Rev. J. H. Austen procured one at Ensbury in July 1839, and Mr. Pike another in Poole harbour in the winter of 1872-73. Mr. Cecil Smith says that it is an occasional spring and autumn visitant in Somersetshire, and is occasionally found in considerable numbers. They generally make their appearance about the middle of April, in the marsh or on the river, sometimes as high up as Taunton, and are then in full breeding-plumage. On their return in the autumn they usually come about the middle of August in small flocks consisting of both old and young birds, the former of which are commencing to assume their winter livery. In the spring they are found along the banks of the rivers and in the marsh, whereas in the autumn they frequent the coast. It used formerly to breed in Kent and in Norfolk; and as regards its occurrence in the latter county, Mr. Stevenson writes to me as follows:—"The Black Tern, which at the commencement of the present century bred by hundreds in the Broad- and Fendistricts of Norfolk, is known now only as a passing migrant, appearing pretty regularly, but in

small numbers, in the months of April and May, and again in August and September with the young of the year. In Feltwall fen, where they were formerly very plentiful, and their eggs (known as 'Starn's' eggs to the fenmen) were used as nest-eggs for the Lapwings to 'lay to,' Mr. Alfred Newton informs me they had long ceased to breed until the spring of 1853, when, attracted by the wide extent of waters still unsubsided after the great flood of the previous winter, three pairs of Black Terns, with some Redshanks and Black-headed Gulls (species which had also ceased to nest in that locality), remained to breed, but did not attempt to do so the following season, when the face of the fen country had reassumed its more modern aspect. In the Broad-district the last nest of this species I have any knowledge of was found, at Sutton, in 1858. A single pair made their nest on the Broad about the middle of May, and, I am sorry to say, were shot by a marshman, and with two eggs, freshly laid, were sent to a birdstuffer in Norwich. Both birds and eggs are now in my possession, the former having been shown to me in the flesh, the latter before they were blown. The loss of this species as a summer resident in our marshes, like that of the Black-tailed Godwit and the Avocet, is due mainly to those physical changes which drainage and cultivation have effected in their former haunts, no amount of eggng or other persecution during the breeding-season causing them to forsake ancestral spots till these were fairly 'broken up,' as, Mr. Lubbock states in a communication to Yarrell, was the case with a great breeding-place of the Black Tern at Upton near Acle in this county, where 'hundreds upon hundreds of nests might be found at the end of May.' Some fifty years ago they bred also, at that time, about Horsey and Winterton, near Yarmouth. I have known this species occur as early as the 2nd of April; and both in spring and autumn stragglers are not unfrequently met with on our inland meres and lakes, and following the course of the Yarr from the coast at Yarmouth. I have known a specimen shot near the foundry bridge, within the bounds of the city; and others have been seen on the reservoir of the Norwich waterworks, on the further side of the city." Mr. Cordeaux says that it is not uncommon on the shores of the Humber district in the autumn: immature birds are principally met with; but occasionally mature birds are obtained.

It appears to be a somewhat rare straggler in Scotland. Mr. Don, about the end of the last century, recorded it as common on the sands of Barrie; but it appears doubtful if the birds seen by him were resident. Mr. Robert Gray writes (*B. of W. of Scotl.* p. 472) that "of late years Black Terns have been observed in the spring time and autumn in many Scottish counties; but these, generally speaking, have been stray birds. In Haddington, Berwick, Aberdeen, Fife, and Dumfriesshire many specimens have from time to time been shot and preserved. In the west of Scotland small flocks occasionally appear at Loch Fyne and other sea-reaches. Mr. George Hamilton informs me that he and his brother observed five specimens near Minard in September 1860; and I have myself seen the species on Loch Lomond, flapping round the boat in which I was rowing, within a distance of eight or nine yards. I may add that one (an adult bird) was shot near Stranraer on the 29th August, 1868, and preserved by Mr. M'Cornish, birdstuffer in that town; and about the same time in the year following, a young bird of the year was seen by myself at Girvan, in Ayrshire. Mr. Angus informs me that a specimen of the Black Tern was shot near Aberdeen by Mr. Giles, a well-known artist residing in that city, and that another (in summer plumage) was shot by himself at Don Mouth on 30th April, 1867. The specimen on

Loch Lomond was seen on the 25th May following. A young bird of the year was shot by Mr. Harvie-Brown on the banks of the Forth, near Grangemouth, on 10th September, 1870. According to Mr. Thomas Edmondston it has also on one occasion been seen in Shetland."

In Ireland, according to Thompson, it is of occasional occurrence, chiefly in the autumn, in immature plumage. It does not appear to have occurred in the Færoes; but Mr. Collett informs me that it appears now and again in Southern Norway, and may possibly breed there. Nilsson says that it is a summer visitant to Southern Sweden, arriving in May and leaving in September. It breeds in Southern and Eastern Skåne, and is stated to occur on the east coast up to Upland. In Östergöthland it is very rare, but tolerably numerous in Gottland. Wallengren says that it breeds here and there in North-eastern Skåne, and it also breeds near Gothenburg, but is not common. According to Dr. Palmén (Finl. Fogl. ii. p. 580), although the present species has but very seldom been met with in Finland, it is probable that it may occur more frequently, and possibly it breeds in the south-western portion of the country. Sadelin includes it, but does not give any locality; and Bergstrand speaks of it as occurring in Åland. In the Finnish collection there is a specimen which was shot near Åbo, and presented by Mr. von Haartman, in 1837. Mr. Sahlberg observed a specimen on Lake Pyhäjärvi, in Yläne, in July 1864, which was by no means shy and kept close to the boat. Mr. Grönfeldt also states that Mr. A. Wahlroos has on several occasions during the summer seen a Black Tern in the large inlets formed by the Kumo river below the town of Björneborg.

Mr. Sabanäeff informs me that it is tolerably generally distributed throughout Central Russia, and breeds in the Jaroslaf Government. In Southern Russia it is common. In the Ural it does not occur on the eastern slope higher than about 57° N. lat. On the southern shores of the Baltic it is found in almost all suitable localities; it not unfrequently straggles far inland; and Naumann says that it is found annually in Anhalt, and is numerous in suitable localities. Mr. A. Benzon informs me that it is found throughout Denmark in marshy places, and is not uncommon during the breeding-season, arriving late in May. It breeds numerously on Seeland and Jutland, but is less numerous on the small islands in the south. On the German coasts of the North Sea it breeds also not uncommonly; and Mr. H. Durnford, who collected there, writes (*Ibis*, 1874, p. 400) as follows:—"We found two pairs nesting in a very wet, marshy spot on Nordstrand, and one pair on Föhr. We observed a few pairs on the mainland, near Husum, and again near Hayer, in very wet places. All the nests we found were made of the dead stems of reeds, and resting, half floating, just at the edge of pools of water among tall rushes." Baron von Droste Hülshoff says that he only occasionally observed it on the Island of Borkum; but it becomes common on Nordernei, and is numerous in some parts of Holland, where it arrives early in May and leaves late in August. Mr. Labouchere informs me that it is often found on meres and marshy places far inland, and appears to be most numerous in the vicinity of Gouda, in Southern Holland, but he has also seen it in many other parts of the country. Throughout the entire year it is said to occur in marshy places in Belgium, and breeds in various localities in that country; and Messrs. Degland and Gerbe write that it is very common in France, and is seen regularly in April and May, August and September, in the northern, central, and eastern departments, and is said to be much more numerous in the south; for M. Crespon states that sometimes as many as 500 are exposed for sale in the market

at Nîmes. Mr. J. Ray found it breeding in the département de l'Aube, where it arrives late in April and leaves at the end of August.

It is found in Portugal, and, according to Dr. E. Rey, is very common on the Tajo; but he did not meet with it in Algarve. When in Spain I not unfrequently saw it exposed for sale in the markets of Valencia and Barcelona, and met with it not far from the latter town on a river which had dried up into a succession of pools. Colonel Irby says that it appears in Spain late in April, rather later than the Whiskered Tern, and nests in the same situations as that species, but rather later; and Mr. Howard Saunders speaks of it as being abundant in the marisma, and very numerous in the rice-swamps of the east coast. Salvadori states that it is common in Italy in the spring and autumn migrations; and it is said to breed in the lagoons of Venice. Mr. A. B. Brooke records it as not uncommon in Sardinia during the summer. Mr. C. A. Wright says that it is occasionally met with in Malta in the autumn; and he has lent me examples shot there in August.

In Southern Germany it is not uncommon. Dr. A. Fritsch says that it breeds commonly on the small lakes near Wittingau, in Bohemia, also near Okor, Schisnik, Böhm-Leipa, Podebrad, &c.; and the late Mr. E. Seidensacher informed me that he now and again used to see it near Cilli, in Styria. On the Danube it is very numerous as far up as Belgrade; and as a straggler it most likely occurs much higher up the river. Both Lindermayer and Von der Mühle speak of it as being very common in Greece; and the former adds that it is said to be resident on the islands. Dr. Krüper remarks that it arrives earlier than the White-winged Tern, but he does not know if it remains to breed in Greece, or passes on further north. It is, however, known to breed in Crete. It occurs in Southern Russia, and is stated to be common on the Caspian; and it has also been recorded from Asia Minor and Palestine.

In North-east Africa it is somewhat uncommon; but Von Heuglin says that it now and again occurs in winter and spring on the coasts of both the Mediterranean and the Red Sea, and ranges as far south as Kordofan. Loche records it as breeding in Algeria; but Canon Tristram says that he only observed it in the western Sahara. Favier (*vide* Colonel Irby) says that it is "abundant near Tangier when on passage, crossing the straits in large flights during May, and returning in September and October; but they are not seen in the winter months."

According to Mr. Sharpe Mr. Swanzy has received a specimen from Fantee; and Mr. Andersson, who says that he met with it in Damara Land, observes that he never saw it on the coast, but that it is common on many freshwater lakes, and, during the wet season, hunts over the temporary rain-pools. Mr. Layard does not record its occurrence in the Cape colony; but Mr. Ayres says that he obtained it in the Transvaal. Mr. Howard Saunders, however, states (P. Z. S. 1876, p. 643) that the birds collected by Mr. Ayres and others are *H. leucoptera* in immature plumage, and he only knows of one specimen, obtained on the 4th January, 1871, at the Cameroons, which is really referable to the present species.

To the eastward the present species does not appear to range far; and though it is said to be common on the Caspian, and Dr. Severtzoff states that it breeds in Turkestan, I do not find any record of its occurrence in India.

In the Nearctic Region, however, the present species has a tolerably wide range, being found in America from the New-England States down as far south as Peru and Chili. The American

form of the Black Tern has been separated specifically under the name of *Hydrochelidon plumbea*; but, after a careful examination of a series of examples from Europe and America, I cannot find any valid reason to make two species. It is true that, as a rule, the American bird has the underparts blacker than in our European bird; but there is great variation in this respect. The palest specimens are certainly those from Northern Europe; and I possess examples from Denmark which have only the head black, the underparts being dark sooty plumbeous; but on the other hand, specimens from Spain are much blacker, and I possess two from there which are quite as dark as average American birds; and these last also are subject to some variation in shade of colour, though I have never seen any as light as the Danish specimens in my collection, and in general they are nearly as black on the underparts as *Hydrochelidon leucoptera*.

The Black Tern has been recorded from Canada, where it appears to be common, and throughout the whole of the United States. My brother found it exceedingly numerous during the breeding-season on Lake Ontario; and it is recorded from New York, Massachusetts, and other States in Eastern North America. Mr. A. C. Stark informs me, the present species "breeds commonly in many parts of Wisconsin, and very abundantly in the prairie districts of Western Minnesota, being especially numerous in summer on the numerous small lakes and ponds between the Otter-tail and Bois-de-Sioux rivers. Here they commence nesting about the last week in May, and lay generally two, seldom three, eggs. I nearly always found them nesting in company with the Yellow-headed Blackbird (*Xanthocephalus icterocephalus*), both species showing a preference for lakes in sheltered hollows that are partially overgrown with tall reeds. The growing reeds were sometimes completely filled with the nests of the Yellow-heads, and the floating masses of fallen reed covered equally thickly with those of the Terns. Not unfrequently I have found the Black Terns' nests on the top of deserted houses of the musk-rat. Once I found them mixed up with those of a large White Tern that I did not identify, probably *St. forsteri*!" Mr. H. M. Labouchere also writes to me that he observed it in large numbers in the marshy prairies of Northern Minnesota, where they breed amongst the wild rice bordering the lakes; in those parts where the land was being brought under cultivation he saw flocks of hundreds of individuals following the plough, and darting down on the worms and grubs exposed as the furrows were turned up. When at Matamoras, on the Rio Grande, I found the present species common on the lagoon near that town during the summer; and it certainly breeds near there. I had also a specimen sent to me from Fort Stockton, in Texas, and one from the city of Mexico. Dr. Gundlach states that it occurs in Cuba; and both Dr. Coues and Mr. Salvin record it from Honduras. On the west side of the continent it was found by Mr. Dall in Alaska, and breeds on the marshes near Fort Yukon. It is said to be common on the coasts of California. Grayson met with it at Mazatlan; and it ranges as far south as Peru and Chili in the winter season.

Unless subjected to persecution, the Black Tern is an exceedingly tame and confiding bird. I have often watched it hovering in the air over a piece of water, not ten feet distant from me; and they would perch on the stakes driven in at a little distance from the shore, and sit there preening their feathers or resting, quite undisturbed by my close proximity. When it has eggs or young it is much more fearless than at any other season, and both the male and the female will fly round the head of an intruder so closely that they may almost be caught with the hand. On the wing the present species, like its allies, is extremely graceful, and appears almost as

buoyant as a feather in the air; but its flight is swift, and it turns with ease, and when it pounces down on its prey it drops like a stone from the air, where it usually hovers for a moment before darting down. It breeds in marshy localities, where it builds a tolerably well constructed nest of grass and marsh-plants, in which it deposits three eggs. M. A. Benzon, writing to me from Denmark respecting the occurrence and nidification of the present species, says:—"It arrives here late, not till the latter end of May, and leaves again in September. At Söborg Mose, near Copenhagen, there is a breeding-place of the Black Tern, where, should one be in search of the eggs of *Podiceps rubricollis*, *Cygnus olor*, *Circus rufus*, and *Fulica atra*, about the middle of May, one will, as a rule, not see a single Black Tern; but should one return a fortnight later in search of eggs of the Shoveller, or to procure the young of the Coot &c., one is sure to see flocks of the Black Tern hovering over the marsh. They nest in a portion of the marsh where scarcely any other species breeds; and the nests are not collected in close colonies, as is the case with the Black-headed Gulls, but they are somewhat scattered about. I once found a nest of the Red-necked Grebe amongst those of the present species. The nest is placed amongst aquatic herbage, such as *Equisetum limosum*, *Typhia angustifolia*, &c. &c., where it is not too dense; and I have on many occasions found the nest almost floating. The nest is constructed of *Equisetum limosum*, *Potamogeton natans*, *Typhia*, and *Polygonum amphibium*, sometimes of one, and at others of several of these plants; and it is lined with fine *Equisetum* bents. I have found eggs from the 1st of June to the 6th of July, on which latter day I found at the above-named locality several new nests without eggs, whereas at the same time most of the young birds had already left the other nests, and only two contained strongly incubated eggs, and a third a rotten egg and one young bird; a second young bird was swimming outside the nest. This may tend to show that the present species breeds twice in the season, or that young pairs do not breed so early; or else it is possible that the owners of these nests had their first eggs destroyed by a Crow or a Harrier. Three eggs are the number deposited by the present species; and to this number they appear always to adhere. With regard to its food, it appears to consist of worms, insects and insect-larvæ, and various aquatic animals: it appears even to feed on leeches; for in Jutland, near Viborg, where I have an interest in some leech-pools, the overseer has continually to drive away the Black Terns, which always come in companies of four or five individuals to the ponds at such times as the leeches are moving about, whereas they never fly down to the ponds after fish."

I possess a tolerably large series of the eggs of the present species, which vary somewhat both in colour and markings. The ground-colour is lighter or darker ochreous clay, in one or two almost olivaceous ochreous; and the markings consist of dark purplish grey shell-blotches, and blackish surface-spots and blotches. Some are somewhat sparingly spotted, whereas others are very densely blotched. In size they vary from  $1\frac{18}{40}$  by  $\frac{38}{40}$  inch to  $1\frac{21}{40}$  by  $1\frac{1}{40}$  inch.

The specimens figured are an adult bird in full breeding-plumage from Denmark, and a winter specimen from Southern Europe; and, though I have described a specimen from Spain, I have deemed it best to figure the paler North-European bird, as it differs most from the extreme dark form found chiefly in the Nearctic Region.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, *juv.* Pagham, Sussex (*R. B. Sharpe*). *b*, ♂, *c*, ♀. Boel, Jutland, June 1863 (*A. Benzon*). *d*, *e*, *pulli*. Boel, 1869 (*A. B.*). *f*, ♂. Barcelona, Spain, May 4th, 1866 (*H. E. D.*). *g*. Seville, Spain (*Colonel Irby*). *h*. Biskra, Algeria, winter (*Fairmaire*). *i*, *k*, ♂, *l*, ♀. Near Kingston, Lake Ontario, June 1872 (*A. R. Dresser*). *m*, ♀. Kingston, July 1872 (*A. R. D.*). *n*, ♂. Matamoras, Mexico, August 11th, 1863 (*H. E. D.*). *o*. City of Mexico (*White*).

*E Mus. C. A. Wright.*

*a*, *b*, ♀. Malta, August 6th, 1870 (*C. A. W.*).

Subfamily *LARINÆ*.

## Genus XEMA.

*Larus* apud Sabine, Trans. Linn. Soc. xii. p. 522 (1818).

*Xema*, J. Ross in Ross's Voyage, 8vo ed. ii. p. 164 (1819).

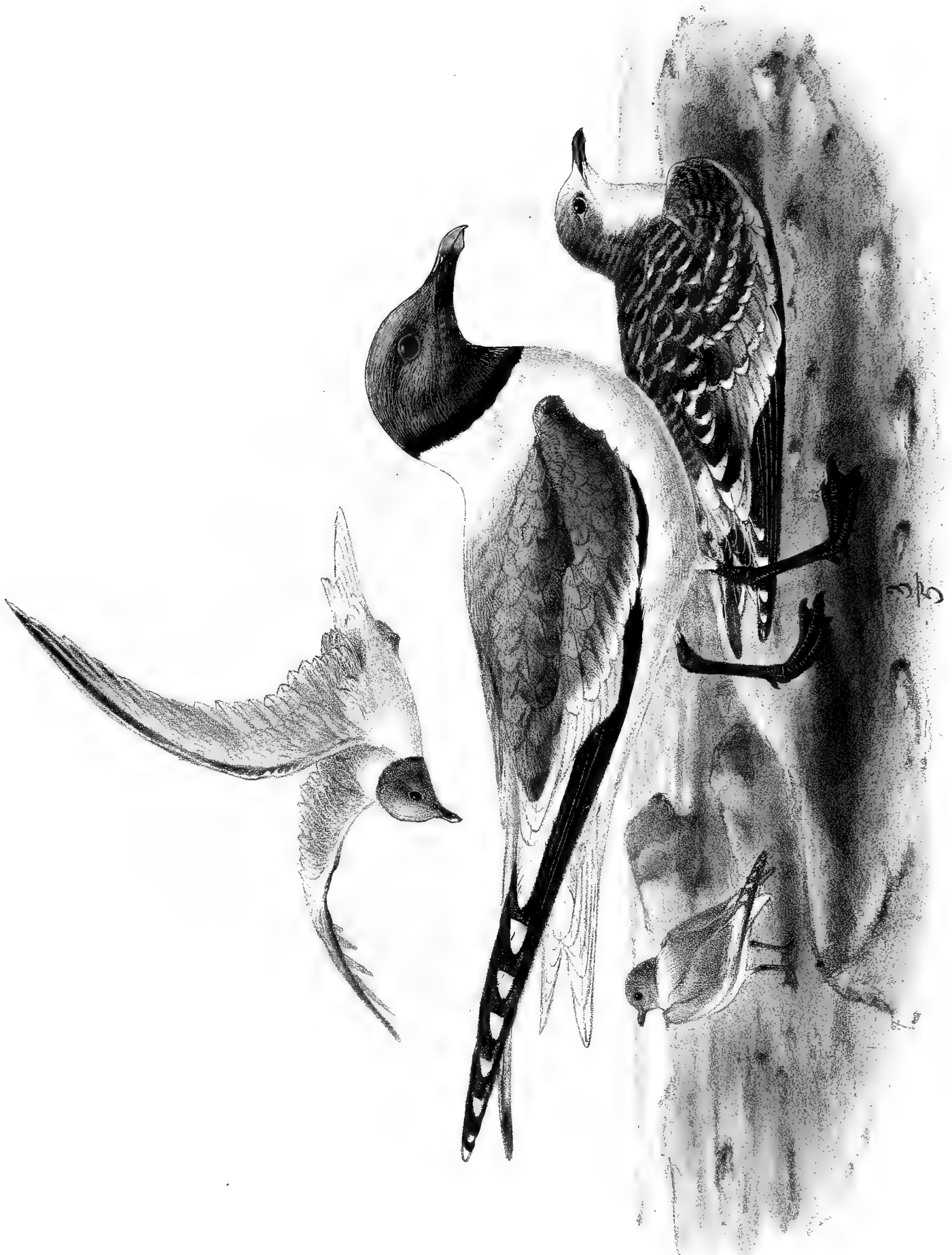
*Gavia* apud Macgillivray, Man. Brit. B. ii. p. 241 (1842).

THIS genus contains only two species:—*Xema sabini*, which inhabits the boreal portions of the Nearctic and Palæarctic Regions; and *Xema furcatum*, which inhabits the Nearctic Region. In general appearance, and especially in the form of the tail, these birds somewhat resemble the Terns, and form as it were a link between them and the Gulls. They are said to resemble the Black-headed Gulls somewhat in habits, and, like them, feed on various kinds of marine insects, small fish, crustacea, &c. They have a light and easy flight, and walk with tolerable ease. They breed in the Arctic regions of both the Old and the New World, their nests being a mere depression in the moss, lined with a few dry grass-bents; and their eggs are dull brownish olivaceous blotched with dull brown.

*Xema sabini*, the type of the genus, has the bill about as long as the head, moderately stout, the upper mandible straight to beyond the nostrils, then sharply decurved to the tip, which is attenuated, but rounded and sharp-edged; nostrils basal, linear; wings long, pointed, the first quill longest; tail moderately long, forked; legs moderately long, the tibia bare for some distance, tarsus tolerably strong, anteriorly scutellate, posteriorly and laterally covered with small roundish or rectangular scales; hind toe very small, elevated; anterior toes moderately long, scutellate, connected by reticulated membranes; claws short, stout, slightly curved, slightly sharp, that on the middle toe with the inner edge dilated.







## XEMA SABINII.

(SABINE'S GULL.)

*Larus sabini*, J. Sabine, Trans. Linn. Soc. xii. p. 522, pl. 29 (1818).*Xema collaris*, J. Ross, in Ross's Voyage, 8vo ed. ii. p. 164 (1819).*Larus sabinei*, Sabine, J. C. Ross, in Ross's Voy. App. p. xxxvii. no. 27 (1835).*Xema sabini* (Sabine), Eyton, Rarer Brit. Birds, p. 64 (1836).*Gavia sabini* (Sabine), Macgillivr. Man. Brit. Birds, ii. p. 241 (1842).*Figuræ notabiles.*

Sabine, *l. c.*; Fritsch, Vög. Eur. taf. 55. fig. 4; Gould, B. of Eur. pl. 429; id. B. of G. Brit. v. pl. lxvii.; Audubon, B. of Am. pl. 441; Naumann, Vög. Deutschl. taf. 388. figs. 3, 4.

*Ad. ptil. æst.* capite et collo superiore saturatè plumbeis: torque collari nigro: collo imo et corpore subtùs albis: dorso, scapularibus et tectricibus alarum canis, marginibus alarum a flexurâ nigris: remigibus primariis nigris albo apicatis et in pogonio interno a basi ferè ad apicem conspicuè albo marginatis, secundariis et tectricibus alarum medianis conspicuè albo terminatis: caudâ albâ, forficatâ: rostro nigricante, maxillâ aurantiaco, mandibulâ flavo apicatâ: marginibus palpebrarum et angulo oris miniatis: iride pallidè brunneâ, pedibus nigricantibus.

*Juv.* pileo sordidè brunnescenti-cinereo, plumis pallidiore apicatis, fronte ferè albidâ, stragulo brunnescenti-cinereo, plumis ad basin sordidè cærulescenti-cinereis et albido apicatis: alis ut in adulto, sed secundariis intimis dorso concoloribus: caudâ forficatâ, albâ, conspicuè nigro terminatâ et vix albido apicatâ: corpore subtùs albo.

*Adult in breeding-plumage* (E. of Fort Anderson, Arctic U. S.). Head and upper part of the neck rich dark lead-grey, below which the neck is encircled by a jet-black ring, which is narrower on the fore part and broader on the hind part of the neck, lower part of the neck, fore part of the back, tail, and underparts pure white; back and upper surface of the wings pale blue-grey; the edge of the wing from the flexure black; first five quills black, tipped with white, and on the inner web broadly margined with white from the base nearly to the tip; secondaries and secondary coverts blue-grey, broadly tipped with white; bill blackish, tipped with orange on the upper and yellow on the lower mandible; edge of the eyelids and gape vermilion; iris light brown; legs blackish; tail slightly forked. Total length about 13·5 inches, culmen 1·3, wing 11·0, tail 4·6, tarsus 1·4.

*Young* (Disco Bay, end of July). Crown dull brownish ash, most of the feathers tipped with pale brown, forehead fading to pale whitish ash; back and mantle generally dark brownish ash, the feathers dull bluish ash at the base, and tipped with dirty white, giving the upper surface of the body a mottled appearance; edge of the wing, quills, and wing-coverts as in the bird above described, except that the inner secondaries are like the back; tail white, broadly terminated with black, and narrowly tipped again with white; underparts pure white.

Sexes similar, except that the female is rather smaller than the male.

*Nestling* (fide Middendorff, Sib. Reise, p. 245, pl. 24). Underparts whitish grey, upper parts rusty yellow, all over spotted with black. In his plate he represents the lower part of the breast and abdomen as being pure greyish white, unspotted.

THIS beautiful Gull is an inhabitant of the arctic regions of Asia and America, being but a rare straggler to the northern portions of Europe. It was first described from Davis's Straits by Mr. Joseph Sabine, who writes as follows:—"I received in the last summer, by one of the whaling ships from Davis's Straits, a collection of birds, which had been made by my brother, Captain Edward Sabine, of the Royal Artillery, who accompanied the late expedition in search of a north-west passage. Among them were specimens of a Gull hitherto unknown and undescribed. My brother's account of them was as follows:—They were met with by him and killed on the 25th of July last on a group of three low rocky islands, each about a mile across, on the west coast of Greenland, twenty miles distant from the mainland, in latitude  $75^{\circ} 29' N.$ , and longitude  $60^{\circ} 9' W.$  They were associated in considerable numbers with the *Sterna hirundo*, breeding on those islands, the nests of both birds being intermingled. This species lays two eggs on the bare ground, which it hatches the last week in July: the young when first hatched are mottled with brown and dull yellow. The eggs are an inch and a half in length, and of regular shape, not much pointed; the colour is olive, much blotched with brown. They flew with impetuosity towards persons approaching their nests and young; and when one bird of a pair was killed, its mate, though frequently fired at, continued on wing close to the spot where it lay. They get their food on the sea-beach, standing near the water's edge and picking up the marine insects which are cast on shore."

It has occurred several times in Great Britain. Yarrell (Brit. Birds, iii. p. 550) says that one was "killed at Milford Haven in the autumn of 1839, and another, shot in Cambridgeshire, was shown to me by Dr. Fitch. A fine specimen was obtained at Newhaven in December 1853, as recorded by Mr. William Borrer." Mr. Hore records two from Brinham, Torbay, in October 1843, (Zool. 1845, p. 879). Mr. George Dawson Rowley records one from Hove, Brighton, 7th October, 1858; Mr. Edward (Zool. 1860, p. 6974) refers to one having been seen on the Banffshire coast; one obtained by Mr. Thomas Sorrell at Barking Creek, on the 8th September, 1862, is now in Mr. Saunders's collection; Mr. Mathew records one (Zool. 1863, p. 8692) from Weston-super-Mare; Mr. Rodd (Zool. 1866, p. 501) refers to one having been obtained at Mounts Bay, Cornwall, in September 1866; Mr. Boulton (Zool. 1867, p. 543) states that one was obtained at Bridlington, Yorkshire, 5th September, 1866; Mr. Gatcombe (Zool. 1867, p. 557) records one from Plymouth in the autumn of 1866; Mr. Mathew (Zool. 1867, p. 992) records one as obtained at Weston-super-Mare on the 14th September, 1867; and Mr. Harting (Hand. of Brit. Birds, p. 172) states, on the authority of Mr. J. H. Gurney, jun., that one was obtained at Eastbourne on the 10th October, 1870.

Referring to its occurrence in Ireland, Thompson (B. of I. iii. p. 309) says that he "first noticed its occurrence in Ireland before the Linnean Society on the 15th of April, 1834, when the following paper was read:—"On the present occasion I have the high satisfaction of enriching the British Fauna by adding to it the beautiful *Larus sabini*. The bird now exhibited was shot in Belfast Bay on the 18th of September, 1822, by the late John Montgomery, Esq.,

of Locust Lodge, who carefully preserved it, under the impression that it was an individual of the closely allied species *Larus minutus*, by which name it was distinguished when presented in April 1833 to the Natural-History Society of Belfast. Mr. Montgomery informed me that, from the diminutive size &c. of this bird when first seen by him, he had no doubt of its rarity. It was so unwary as to alight once or twice within twenty yards of him; but, to avoid disfiguring it, he fired from so great a distance, that it was only at the third shot eventually obtained.' Mr. Thompson discovered a second example 'in the Museum of the Royal Dublin Society, shot by Mr. Wall (the Curator) a few years previous in Dublin Bay, near Kingstown.' And 'a third specimen was shot on or about September 15, 1834, on the shore of Belfast Bay, near Claremont, the residence of Mrs. Clemow, by whom it was subsequently bequeathed to the Belfast Museum.' The fourth occurrence of this species in Ireland 'was shot in company with Terns (*Sternae*) in the Bay of Dublin on the 12th of September, 1837.'

Since the above was written by Thompson, it has been thrice recorded from Ireland, in all three instances by Mr. H. Blake Knox, who says (Zool. 1868, p. 1099) that one was obtained at Kingstown Harbour in September 1866, a second one at the same place in September 1867, and a third one at Bangor, co. Down, in October 1867. The only instance of its occurrence in Scotland is somewhat doubtful, as the bird was only seen, but not obtained, by Dr. Saxby.

In Greenland it is, according to Professor J. Reinhardt (Ibis, 1861, p. 19), "very rare in the Danish settlements, and breeds only to the north of Upernavik." It has occurred on the Færoes, where, according to Mr. H. C. Müller, one was shot near Thorshavn on the 26th of January, 1856; but I do not find any instance of its occurrence in Norway, Sweden, or in Northern Russia; nor does Professor Malmgren believe in its occurrence in Spitzbergen, though Sir J. Richardson (Faun. Bor.-Am. p. 428) says that "Captain Sabine killed a pair in Spitzbergen." In Northern Germany it has occurred several times. Professor Blasius (Ibis, 1862, p. 71) records the occurrence of an immature specimen on Heligoland; and Dr. Altum says that two have been killed in Munsterland—one an old male in full plumage, and the other, which was obtained near Baumbergen, an immature bird. The exact locality where the first-named specimen was obtained is not recorded. Kjærbølling says that, according to Mr. E. Hage, an example was shot on the coast of Holstein. De Selys records the capture of one on the coast of Holland, and of another in Picardy; and Degland and Gerbe state that an adult was killed near Rouen, and another specimen was obtained near Dunkirk, on 24th September, 1847.

I do not find any record of its having been met with in North-eastern Europe; but it appears to be numerous in the extreme north of Asia. Von Middendorff says (Sib. Reise, p. 244) that "it appeared on the Taimyr river in  $73\frac{3}{4}^{\circ}$  N. lat. on the 5th June, and soon disappeared, not being seen again until we reached the ponds on the tundras and the small alluvial islands in the Taimyr lake and river, north of  $74^{\circ}$  N. lat., where it was common, and was breeding in company with the Arctic Tern. When we left the flat alluvial land and entered into the mountainous districts we lost sight of it altogether." From there it extends across into North America. Mr. Dall (Trans. Chic. Acad. Sc. i. p. 306) says that it was "abundant in the marshes about Pastolik and St. Michael's, where it breeds. Not rare at Plover Bay, E. Siberia. I have never observed it far inland, in strictly fresh water; and it is not found at Nulato;" and Mr. Bannister (*l. c.*) also writes as follows:—"In the early part of July

I observed large flocks of these birds in the canal; and the two specimens obtained were shot by Mr. Pease in the same locality at very nearly the same period. I have never observed the species at any other point near the Redoubt." Sir John Richardson also met with it in Arctic North America, and found it breeding off Cape Dalhousie. He also says (Faun. Bor.-Am. p. 428) that a solitary individual was seen in Prince Regent's Inlet on Sir Edward Parry's first voyage; and many specimens were procured in the course of the second voyage, on Melville Peninsula. Dr. Elliot Coues (Key to N. Am. B. p. 317) gives its range in the Nearctic Region as "Arctic America, both coastwise and in the interior, common, but still rare in collections; in winter, south occasionally to New York (*Audubon*) and Utah (*Allen*)."

Of the habits of the present species but little has been recorded. I give above some details given by the discoverer of this species; and Middendorff, who found it breeding in Northern Siberia, writes (*l. c.*) that on the 10th July the eggs were much incubated, and were deposited in depressions in the moss lined with dried grass bents from the previous year, two eggs being in each nest. On the 17th July tolerably large young birds were seen, though most were only just hatched. On the 15th August he saw full-grown, though not full-feathered, young. They dived with ease, whilst the parent bird flew overhead, every now and then darting down, uttering a harsh note somewhat resembling that of *Turdus pilaris*. He found the crop of the old bird and the stomach of the young bird filled with the larvæ of a dipterous insect. Its flight resembles that of a Tern, which group this species very closely approaches.

Sir John Richardson (Journ. of Boat Voyage, i. p. 262) says that an island off Cape Dalhousie, on which he encamped, is a breeding-place of this Gull, and that its eggs are deposited in hollows of the short and scanty mossy turf which clothes the ground. I have two eggs sent to me by Professor Spencer F. Baird, of Washington, who informs me that they were obtained by Mr. R. MacFarlane, at Franklin Bay, on the coast of Arctic America, east of Anderson River, in 1865. In colour they are dull brownish-olive, in tinge of colour not unlike a Nightingale's egg, and are here and there marked with an indistinct dull brown blotch, the larger end being more marked than any other portion of the egg. In size they measure  $1\frac{2}{40}$  by  $1\frac{1}{40}$  inch.

The specimens described and figured are an adult bird in breeding-plumage in my own collection, and a very young bird in the collection of Mr. Howard Saunders.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a, b, ad.* Arctic coast, east of Fort Anderson, U. S., summer of 1865 (*R. R. MacFarlane*).

*E Mus. Howard Saunders.*

*a, juv.* Barking Creek, Essex, September 8th, 1862 (*Thos. Sorrell*), specimen referred to in Harting's B. of Middlesex. *b, ♀ ad.* Labrador (*Möschler*). *c, d, ad.* Jacobshavn, N. Greenland, summer of 1872 (*E. Whymper*). *e, juv.* Disco Bay, Greenland, July 1867 (*E. Whymper*).

## Genus RHODOSTETHIA.

*Larus* apud Macgillivray, Mem. Wern. Soc. v. p. 249 (1824).

*Rossia* apud Bonaparte, Comp. List, p. 62 (1838).

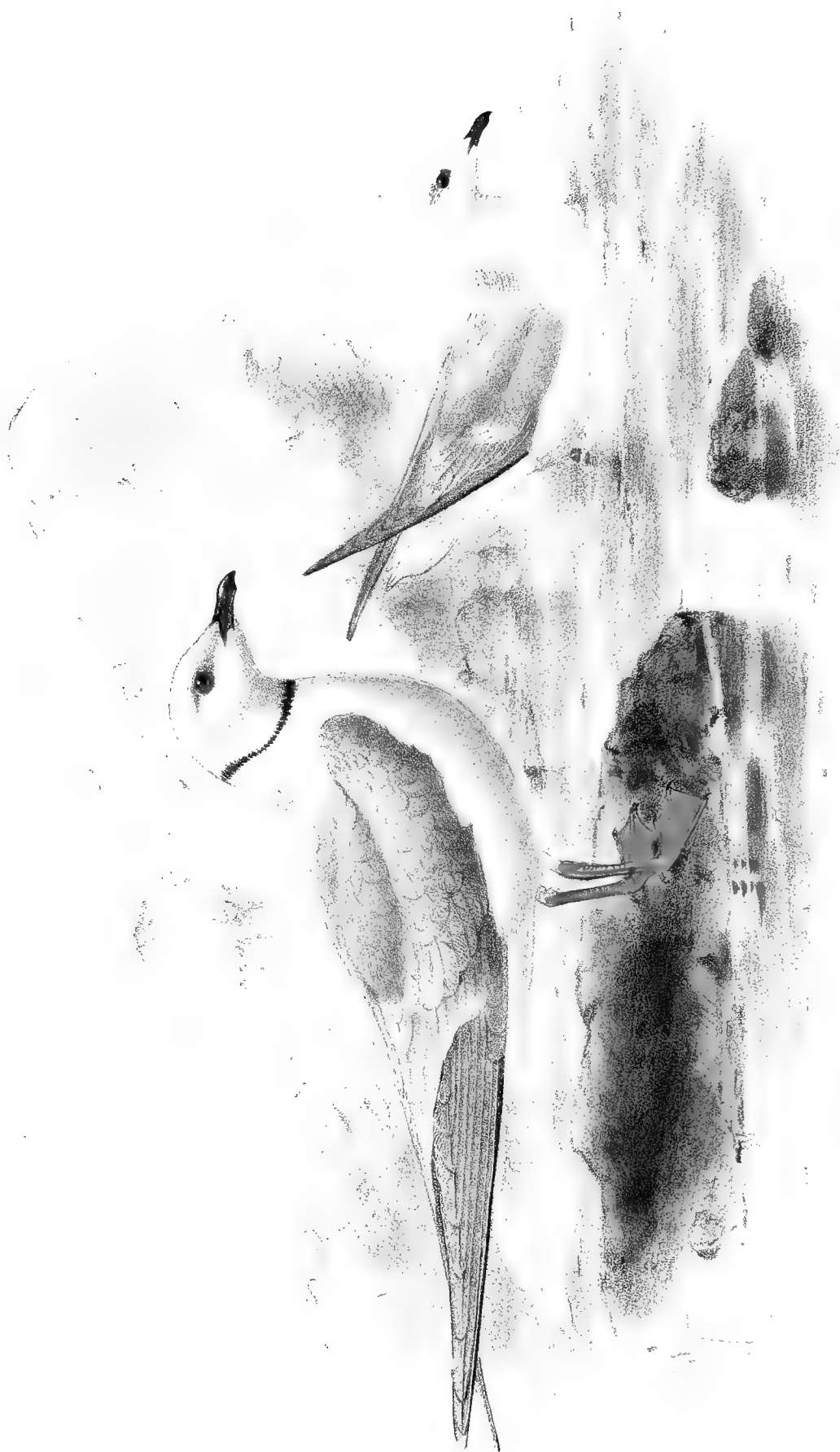
*Rhodostethia*, Macgillivray, Man. Brit. Orn. ii. p. 253 (1842).

THIS genus contains but a single species, which inhabits the arctic portions of the Palæarctic and Nearctic Regions, but rarely straggling south of the Arctic circle. So far as I can ascertain, nothing definite is known respecting either the general habits of this rare bird, which, however, in all probability, does not much differ therein from its allies.

*Rhodostethia rosea* has the bill short, rather slender, the upper mandible decurved towards the tip, the lower mandible with the intercrural space narrow, the knob slight, the dorsal line concave, and the tip narrow; wings long, pointed; the tail cuneate, the central feathers much longer than the lateral ones; legs short, the tibia bare for a short distance; tarsus anteriorly scutellate, rough posteriorly; hind toe small, with a large curved claw; anterior toes moderate, the webs entire; claws rather large, curved, compressed, acute; plumage soft and full, the head always white, the neck in the summer encircled by a narrow black ring.







CUNEATE-TAILED GULL.  
RHODOSTETHIA ROSEA.

Mus. B. 100

H. G. Koudemans del.

## RHODOSTETHIA ROSEA.

(CUNEATE-TAILED GULL.)

*Larus roseus*, Macgill. Mem. Wern. Soc. v. p. 249 (1824).*Larus rossii*, Richards. App. Parry's Second Voy. p. 359 (1825).*Rossia rosea* (Macg.), Bp. Comp. List, p. 62 (1838).*Rhodostethia rossi* (Richards.), Macg. Man. Brit. Orn. ii. p. 253 (1842).*Rhodostethia roseus* (Macg.), Bruch, J. f. Orn. 1853, p. 106.*Figuræ notabiles.*

Wils. Ill. of Zool. pl. 8; Jard. & Selby, Ill. Orn. pl. 14; Naumann, Vög. Deutschl. taf. 388.  
figs. 3, 4; Gould, B. of G. Brit. v. pl. 63; Gray & Mitchell, Gen. of B. iii. pl. 180.

*Ad. ptil. æst.* albus, dorso et alis suprâ pallidè cæruleo-cinereis: primariis saturatoribus, scapis cæruleo-cinereis, remige extimo in pogonio externo fere ad apicem nigro, primariis intimis et secundariis omnibus albo terminatis, torque collari nigrâ: corpore subtùs rosaceo tincto: caudâ albâ, cuneatâ: rostro nigro: pedibus rubris.

*Ad. ptil. hiem.* torque collari nullâ: corpore subtùs minus rosaceo tincto.

*Adult in summer* (Disco Bay, 1859). Entire mantle rather pale French grey or pearl-grey; primaries rather darker in shade, the shafts pale lavender-grey, the first quill with the outer web nearly to the tip black; some of the inner primaries and all the short secondaries terminated with white, forming a white bar on the wing; a black band encircling the neck, broadest at the nape and narrowing towards the front of the neck; entire rest of the plumage, including the tail, white, the underparts tinged with rose-colour; tail cuneate in shape, the central rectrices being 0·8 inch longer than the outer ones; bill blackish, feathered down to the nostril; iris dark brown; legs coral-red. Total length about 11·5 to 11·75 inches, culmen 0·95, wing 10·1, tail 4·4, tarsus 1·1.

*Adult in winter* (Tadcaster). Differs from the summer plumage in lacking the black band on the neck, and in having the underparts less tinged with rose-colour, or else pure white.

*Young* (*vide* H. Saunders, Ibis, 1875, p. 485). "Bill black, feathered to base of nostril, thence to tip 0·6 inch; from gape to tip 1·2. Head white; a few dark hairlike feathers round the eye of one specimen, and beneath the eye of the other; black collar slightly developed on the one, distinct in the other, especially on nape. Breast pure white, with a pink tinge on the lower part and on the abdomen. Mantle to rump grey, lighter on shoulders. Wing, length (underneath measurement) 9·4–9·5 inches. Primaries—first, second, and third smoke-brown on outer web and shaft, this colour running round the tip and some way up the inner web, the remainder of which is white; on the fourth and fifth the white portion increases, but the shaft continues dark, although successively becoming lighter till on the tenth it is pure white; in the sixth the dark marking on the webs becomes a brown bar, which gradually decreases until it is nearly lost in the ninth, and totally so in the tenth primary, which is entirely white. These dark tips give a very pretty barred appearance to the wings. Secondaries pearl-grey, passing into

white, thus forming a white band. Carpals and upper wing-coverts smoke-brown, faintly tipped with white; lower wing-coverts grey, like the mantle, but tertials smoke-brown. Tail consisting of twelve feathers, pure white in one specimen; in the other the third and fourth feathers on each side are barred with smoke-brown; the fourth projects beyond them a trifle, the fifth decidedly, whilst the central feathers extend 0·75 inch beyond the fifth, making total projection about one inch. Total length of tail 4·5 inches; wings in stuffed specimen reach a trifle beyond tip. Tarsus 1·15–1·2 inch, middle toe 1·2, outer toe 1·1, inner toe 0·95; hind toe and nail well developed; nails black. Colour of legs and feet (evidently much faded) yellowish clay.”

OF all the known species of Gulls Ross's Rosy Gull, as the present species is called, as well as the Cuneate-tailed Gull, is probably the rarest, as also, from its elegant shape and delicate coloration, one of the most interesting. First discovered in 1823 by Ross on Melville Peninsula, it is so exceedingly rare that only eleven or twelve examples are known to exist (three of which I have been fortunate enough to examine), viz.:—one in the Derby Museum, Liverpool, obtained at Alagnak, in  $69\frac{1}{2}^{\circ}$  N. lat., Melville Peninsula, on the 23rd June 1823; one in the Edinburgh University Museum, marked ♂, obtained at Igloodik, Melville Peninsula, on the 27th June 1823; one in the University Museum at Cambridge, obtained on Grönne Eiland (Green Island), Disco Bay, Greenland, in 1859, by Dr. Pfaff, and received from the Copenhagen Museum, where there are three others from the same locality; one in the collection of Mr. Gätke, a mature bird in winter plumage, shot on Heligoland on the 5th of February 1858; one in the collection of Mr. Alfred Benzon at Copenhagen, obtained at Suderoe, on the Færoe Islands; one in the collection of Lady Georgiana Milner, said to have been killed by a gamekeeper near Tadcaster, in Yorkshire, in February 1847; two in the Mayence Museum, said to have come from Kamtschatka, which is obviously a mistake. The two specimens in the Mayence Museum were examined by Mr. Howard Saunders, who says they are in immature dress, and gives (*Ibis*, 1875, p. 485) a description of them. He expresses a doubt as to the correctness of the statement that they came from Kamtschatka, and states that they were obtained through the Maison Verreaux, and that M. Jules Verreaux assured him he had received them from a Pole who had been in Kamtschatka, but that he still remains sceptical as to the locality. From the above it will be seen that this rare Gull inhabits Melville Peninsula and the coast of Greenland during the summer season, and has strayed southwards to the coast of England, the Færoes, and Heligoland in winter. It is stated that on Parry's Spitsbergen expedition in 1827 it was seen during the journey on the ice as far as they penetrated, and that Lieut. Foster met with it in the Waigats Straits; but no specimens were obtained. Dr. Malmgren expresses a doubt as to the correctness of the identification of the species in this instance; and though Professor Newton urges (*Ibis*, 1865, p. 524) that “we have yet the distinct testimony of Ross himself, the discoverer of this beautiful species, that he saw examples of it when on the celebrated journey over the ice—testimony moreover which is confirmed by that careful observer Sir Edward Parry himself (*Narrative*, &c. pp. 81, 110),”—yet the experience of later explorers shows that Dr. Malmgren's suspicions are justifiable.

Nothing whatever is on record respecting the habits of the present species; and its breeding-haunts and eggs are quite unknown.

Bonaparte (*Consp. Gen. Av. ii. p. 230*) gives as a synonym of the present species *Larus*

*richardsoni*, Wils.; but I am quite unable to find out where this name has been published—certainly not in the ‘Illustrations of Zoology,’ as there the species is called *Larus rossii*.

I may remark with regard to the specimen in the collection of Lady Georgiana Milner, that two totally different accounts are given of it, and it appears most probable that Sir. W. Milner was imposed on. He says (Zool. 1847, p. 1694) that it was killed on the 22nd December 1846 by one Robinson, of Saxton, near Aberford, Yorkshire. On the other hand, Charlesworth, in Proc. Yorksh. Phil. Soc. (reprinted Zool. 1847, pp. 1782 *et seqq.*), quotes a note from Sir W. Milner’s brother to the effect that it was killed by one Horner, in February 1847, near Milford cum Kirby, in the parish of Kirby.

The specimens figured are the adult bird, in full breeding-dress, in the Derby Museum at Liverpool, and the winter-killed example in the Milner collection. I need scarcely add that I do not possess a specimen of this rare Gull.

In the preparation of the above article I have examined the following specimens:—

*E Mus. Cantabr.*

*a, ad. ptil. æst.* Grönne Eiland, Disco Bay, Greenland, 1859 (*Dr. Pfaff*).

*E Mus. Derb.*

*a, ad. ptil. æst.* Alagnak, Melville Peninsula, June 27th, 1823.

*E Mus. Lady Georgiana Milner.*

*a, ptil. hiem.* Yorkshire, February 1847?.



## Genus PAGOPHILA.

*Larus* apud Phipps, Voy. towards N. Pole, p. 187 (1774).

*Gavia* apud Boie, Isis, 1822, p. 563.

*Pagophila*, Kaup, Natürl. Syst. p. 69 (1829).

*Cetosparactes* apud Macgillivray, Man. Brit. Orn. ii. p. 252 (1842).

THIS genus contains a single species, which inhabits the northern portions of the Palæarctic and Nearctic Regions, being seldom seen away from the region of ice.

It flies lightly and with ease, and swims well and buoyantly. It usually follows the seal- and whale-hunters in order to feed on the refuse of the carcasses which are cast out; and it is stated to feed on the droppings of the seals. It is said to build a nest of moss, which it places on the ledge of a cliff; and its eggs are said to be pale olivaceous, blotched with brown.

*Pagophila eburnea*, the type of the genus, has the bill considerably shorter than the head, higher than broad at the base, robust, straight, compressed, the upper mandible decurved towards the tip, which is obtuse but has sharp edges and rather overlaps the lower mandible, which is narrower, compressed, with the intercrural space long and narrow, the crura slightly inclined outwards, a little convex, with a slight prominence at the commissure; nostrils linear, oblong, wider in front, covered above and behind by a thin-edged, sloping plate; wings long, full, pointed, the first quill longest; tail moderate, nearly even or slightly rounded; legs short, the tibia bare for a short space; tarsus anteriorly broadly scutellate, and posteriorly and laterally covered with minute prominent scales; hind toe small, elevated, the claw stout, curved, obtuse; anterior toes moderate; interdigital membranes emarginate; claws stout, slightly arched, obtuse, that on the middle toe slightly dilated on the inner edge; plumage full, close, pure white in the adult bird.







IVORY GULL.  
PAGOPHILA EBURNEA.

## PAGOPHILA EBURNEA.

(IVORY GULL.)

*Rathsherr*, Fr. Marten, Spitz. oder Groenl. Reise, p. 56, tab. *L.* fig. *a* (1675).*Larus eburneus*, Phipps, Voyage towards the North Pole, p. 187 (1774).*Mouette blanche*, Buffon, Hist. Nat. Ois. viii. p. 422 (1781).*Larus albus*, I. C. Schaeffer, Mus. Orn. p. 65, tab. xlii. (1789).*Gavia eburneus* (Phipps), Boie, Isis, 1822, p. 563.*Pagophila*, Kaup (*Larus eburneus*, Phipps), Natürl. Syst. p. 69 (1829).*Gavia nivea*, C. L. Brehm, Vög. Deutschl. p. 766 (1831).*Cetosparactes eburneus* (Phipps), Macg. Man. Brit. B. ii. p. 252 (1842).*Pagophila eburnea* (Phipps), G. R. Gray, Gen. of B. iii. p. 655 (1845).*Larus brachytarsus*, Holb. Faun. Græn. p. 52 (1846).*Pagophila eburneus* (Phipps), Bruch, J. f. Orn. 1853, p. 106.*Pagophila brachytarsus* (Holb.), Bruch, J. f. Orn. 1853, p. 106.*Pagophila niveus* (Br.), Bp. Consp. Gen. Av. ii. p. 230 (1857).*Gavia brachytarsa* (Holb.), Bp. tom. cit. p. 230 (1857).*Mouette blanche*, French; *Elfenbein-Mewe*, *Schnee-Mewe*, German; *Iismaage*, Danish; *Nayauarsuk*, Greenlandic; *Hvitmåse*, Swedish; *Valkea-lokki*, Finnish.*Figuræ notabiles.*D'Aubenton, Pl. Enl. 994; Werner, Atlas, *Palmipèdes*, pl. 16; Kjærb. Orn. Dan. taf. 41; Naumann, Vög. Deutschl. taf. 263; Sundevall, Svensk. Fogl. pl. 79. fig. 1; Gould, B. of Eur. pl. 436; id. B. of G. Brit. v. pl. 62.*Ad. niveus immaculatus*: iride fuscâ, marginibus palpebrarum coccineis: rostro ad basin griseo-cano, et flavo apicato: pedibus nigris.*Juv. albus*: fronte, capitis lateribus, mento et gulâ saturatè fumoso-cinereis: tectricibus alarum et secundariis intimis nigris notatis, et remigibus cum rectricibus conspicuè nigro terminatis.*Adult* (Spitsbergen, summer of 1870). Entire plumage pure white without any markings; iris dark hair-brown; eyelid fleshy and of a brick-red colour; tip of bill split-pea yellow, merging into French grey on the culmen and base of both mandibles; legs and feet jet-black. Total length about 15 inches, culmen 1·5, wing 12·2, tail 5·9, tarsus 1·5.*Young* (Egedesminde, N. Greenland). General colour of plumage white, forehead, sides of the head, chin, and upper throat marked with sooty grey, or blackish grey; wing-coverts and inner secondaries spotted with blackish, and the quills and tail-feathers conspicuously tipped with the same colour.

IN the extreme northern portions of both the Old and the New World the Ivory Gull is tolerably

numerous; but it is scarcely ever seen away from the vicinity of the ice, and is consequently restricted to the far north, immature birds but rarely straggling southward. In Great Britain it is only known as a very rare straggler. Yarrell says that it has been procured near Torquay, and more than once at St. Leonard's; Knox (*Orn. Rambl. Suss.* p. 255) states that three were obtained at Brighton and Rye Harbour, Sussex, in the winter of 1848; the Rev. Murray A. Mathew records the occurrence of one at Weston-super-Mare in 1864; Mr. Hancock states that one said to have been shot off the mouth of the Tyne some years ago is in the collection of Mr. Thompson of Winlaton; and an immature bird, now in the Sunderland Museum, was shot at Seaton Carew in February 1837.

The first recorded British specimen was procured in 1822 by Mr. Edmonston, since when Mr. Robert Gray writes (*B. of W. of Scotl.* p. 481), "various specimens have occurred in Scotland, three of which were shot in Orkney. One of these was killed in 1848; but from that time to the present year I find no other trace of its occurrence in these islands, with the exception of a specimen killed at Melsetter in May 1867, making the fourth Orkney specimen, as I am informed by Mr. J. H. Dunn. Sir William Jardine has informed me that he has an Ivory Gull in his collection which was shot at Thrumster, in Caithness, in November 1854. The species had previously been taken in that country—a local specimen having come into the possession of Mr. Sinclair, of Wick, upwards of twenty years ago. Mr. Thomas Edward also includes this species in his list of Banffshire birds, one having been shot at Gardenstown in December 1860. On the west coast of Scotland, where, according to Mr. Selby, a specimen in immature plumage was obtained in the Firth of Clyde, the Ivory Gull has come under my observation on various occasions. A fine adult bird was shot near Greenock in the winter of 1858; another on the shores of Arran, in September 1866, by Mr. Dunlop, of Glasgow; and a third (a perfect specimen, which I had an opportunity of examining) was killed near Campbelltown in February 1867. About the same time one was killed in Islay (where it had previously occurred on one or two occasions), and another came on shore at Ardchattan, Loch Etive, in a state of exhaustion, and is now in the possession of Mr. M'Calman there. The species has been observed on the upper shores of Loch Fyne, the late Mr. James Hamilton having informed me that he procured one near Minard, and saw others in 1863." Mr. R. Gray further states that Mr. Sinclair saw what he believed to be an Ivory Gull on Ailsa Crag in June 1854. Dr. Saxby says that, according to Dr. Edmonston's son, a specimen besides that obtained in 1822 is said to have been killed some years prior to 1844 in Balta Sound; and Dr. Saxby himself saw one on the 16th January, 1861, at the same place, swimming about catching sillacks. On the Irish coast it is of very rare occurrence. Thompson (*B. of Ireland*, iii. p. 347) cites several instances of it having been seen, and two of its capture—one near Dingle in 1847, and one on the island of Achil.

In Greenland it is said to be common on almost all parts of the coast; but it is not included by Professor Newton in his list of the birds of Iceland.

It straggles but rarely to the Færoe Islands, where Mr. H. C. Müller obtained an adult and a young bird at Sorvaag, on the 12th March, 1858; and Captain Feilden says that he informed him that in the winter of 1862-63 he received a very fine adult bird, killed near Eide, Osteroe, and a live one from the same locality which lived in captivity for six months. On the coast of

Norway it is not unfrequently to be met with; and Mr. Collett informs me that immature specimens occur every winter off the coast of Finmark down to Tromsö, but that adult birds are seldom seen south of the arctic circle, only stragglers being met with. It has been shot in the winter at Trondhjem, Stördalen, near Bergen, and at Karmö, off Stavanger. The last example procured was shot near Christiansand in 1872, and is now preserved in the Trondhjem Museum. In the Baltic it is of extremely rare occurrence. Professor Nilsson states that one was shot near Gefle in February 1853, and that Malmlén killed one in 1848 near Gothenburg. It has been recorded from the northern portions of Finland. Dr. Palmén says that examples were seen several years in the late autumn at the Pallasjärvi lake, in Kittilä; and a young bird was obtained in October 1866, and one, according to Knobloch, in the late autumn of 1872. It doubtless occurs on the northern shores of Russia; but I lack information on this head. It is, however, common in Novaya Zemlya and Spitsbergen. Von Heuglin found it singly in the Matotschkin Scharr in August; but further to the eastward it appears, he says, to be wanting. In Spitsbergen it is, Professor Malmgren says, very common; and Professor Newton writes (*Ibis*, 1865, p. 507) that there "it is, of all others, the bird of which any visitor to Spitsbergen will carry away the keenest recollection. One can only wish that a creature so fair to look upon was not so foul a feeder. In my preceding notes, I have already several times mentioned this species. I have only now to add that, contrary to the experience of almost all other observers, I once saw an Ivory Gull of its own accord deliberately settle on the water and swim. This was in the Stor Fjord. There is a very great variation in the size of different specimens of this bird, which is not at all to be attributed to the sex, or, I think, to age; but I do not for a moment countenance the belief in a second species, which some ornithologists have endeavoured to establish under the name of '*P. brachytarsa*.'" To the southward in Europe the Ivory Gull has been met with as a rare straggler as far as the coasts of Germany and Holland; and, according to Naumann, one was obtained, on the 10th March 1817, as far south as the Lake of Geneva. It is recorded from Denmark by Kjærbölling, who says that, according to Hage, two were shot at Kallebodstrand some years ago; and Benicken states that it was previously shot in Schleswig. I do not find any instance of its occurrence in Holland or Belgium; and Messrs. Degland and Gerbe merely say that it appears accidentally in France, without giving any further details.

I have no data respecting its occurrence on the northern shores of Asia; and it is not mentioned by Von Middendorff. Mr. Swinhoe (*Ibis*, 1875, p. 140) says that he saw a white Gull near Chefoo, which he took to be an Ivory Gull; but I cannot but think that he was mistaken.

In North America, however, the present species is not uncommon. Sir John Richardson says (*Faun. Bor.-Am.* ii. p. 419) that it frequents Davis's Straits, Baffin's Bay, and various parts of the northern shores of the American continent. He observed it breeding in great numbers on the high cliffs perforated with holes which form the extremity of Cape Parry, in 70° N. lat. I am indebted to Captain H. W. Feilden, naturalist to the 'Alert,' for the following notes made by him on the recent Arctic expedition:—"In 1875, I first observed this species on the 24th July, whilst passing through the middle pack of Baffin's Bay. They were tolerably common in the North-water. In August I found several pairs associating with Glaucous Gulls in Payer Harbour, a little to the south of Cape Sabine. An adult male killed at this place had iris dark hair-brown, eyelid

fleshy and of a brick-red colour; tip of bill split-pea yellow, merging into French grey on the culmen and base of both mandibles; legs and feet black. Their note is shrill, and not at all unlike that of *Sterna macrura*, to which genus their flight has more resemblance than to the true *Laridæ*. I found a pair nesting in a precipitous cliff a little to the south of Cape Hayes, Grinnell Land. The highest range of this bird that I noted was lat.  $82^{\circ} 6'$ , Robeson Channel. I did not observe it in the circumpolar basin."

As above stated, the Ivory Gull is found almost exclusively in the vicinity of masses of ice, where it gains a precarious livelihood, feeding chiefly on the droppings of seals, and following the walrus- and seal-hunters to feast on their leavings. Many observers say that it is seldom or never seen swimming on the water, but always on the wing or seated on the ice, whereas others, again, testify that it swims occasionally; and Mr. G. Gillett says (*Ibis*, 1870, p. 306) that he has "frequently seen it settle on the water." Professor Malmgren writes (*Öfv. K. Vet. Ak. Förh.* 1863, p. 102) that in Spitsbergen "it is seldom seen elsewhere than near the ice. It does not settle on the water like other Gulls, but is invariably seen on the edge of the ice; and it takes its prey with its beak from the water when on the wing. This species and the Fulmar appear in numbers when a seal or walrus is being cut up, and are so little shy that if one throws out pieces of fat they will approach quite close. At these places, where the seals &c. are cut up, the Fulmars swim round, whereas the Ivory Gulls are on the wing, or sitting on the ice. Martens remarks also that he did not see them swimming on the water. This Gull feeds on carcasses left by the walrus-hunters or the remnants left over after the Polar bears have eaten; but its chief food consists of the excrements of the seal and walrus. I often observed on my excursions in places where the Ivory Gulls were numerous (as, for instance, in Murchison's Bay, in  $80^{\circ}$  N. lat.), that they will sit for hours at the holes in the stationary ice, through which the seals come up to lie on the ice, waiting for the seals' appearance. They look then as if sitting in council round a table; and this practice has doubtless given rise to the curious name used by Martens in 1675 for this Gull, viz. 'Rathsherr' (councillor), a name analogous in its derivation to that of 'Bürgermeister' (mayor) used for the Glaucous Gull. Round these holes in the ice the resting-places of the seals are coloured brown with their excrements, which are chiefly devoured by birds, only so much being left as will colour the snow. Martens says that he has seen the Ivory Gull feeding on the excrements of the Walrus."

But very little is known respecting the nidification of the present species; and, so far as I can ascertain, there are only three authentic eggs in collections in Europe—one in the Dublin Museum, obtained by Sir Leopold M'Clintock, and two in the Stockholm Museum, obtained by Professor Malmgren. Professor E. Perceval Wright gives (*Ibis*, 1866, p. 217) the following extracts from the diary of Sir L. M'Clintock, kept during his adventurous journey in search of Sir John Franklin, in order to show the circumstances under which the egg now in the Dublin Museum was obtained:—"From the 12th to the 15th of June we were examining the Polynia Islands, the northmost of which I have called 'Ireland's Eye.' It lies almost under the 78th parallel. None of these islands are more than 60 feet above the sea; and they are entirely composed of gravel. Upon one I saw two bird's nests of former years. They were chiefly made of moss; and much more of it had been used in their construction than I had seen growing upon the whole group. The broken pieces of egg-shell were of a pale-olive colour, with irregular

dark-brown blotches.' On the 18th of June the return-journey commenced, and on the 20th Sir Leopold was on the east shore of Prince Patrick's Island. He writes, 'as I was rounding Cape Krabbé, lat.  $77^{\circ} 25'$  N., long.  $116^{\circ}$  W., I saw an Ivory Gull seated upon her nest on a bare patch of gravel, near the beach. There was one egg in the nest. The nest was exactly the same as those seen on the Polynia island; but in addition to the moss, there was a little white down and a few feathers in it. This nest had served for several seasons.' Referring to the nidification of the Ivory Gull in Spitzbergen, Professor Malmgren writes (*l. c.*) as follows:—"On the 7th of July 1861 I found, on the north shore of Murchison's Bay, in  $80^{\circ}$  N. lat., a large number of Ivory Gulls inhabiting a steep, perpendicular limestone cliff, several hundred feet high, in company with Kittiwakes and Glaucous Gulls. These latter had taken possession of the higher portions of the cliff, whereas the Ivory Gulls had taken up their habitation in the clefts and holes about 50 to 150 feet above the sea. I could see clearly that the females were incubating, but could not get at the nests; and circumstances prevented me from making a trial after the eggs with a long rope and necessary assistance until the 30th July. On this day I succeeded, with the help of three men, in getting at two of the lowest nests, in each of which I found one egg. The nests were simply and carelessly constructed, being a hollow, 8 or 9 inches in diameter, in the loose soil on the limestone, this hollow or depression being lined with dry plants, grass, moss, &c., and an odd feather or two. The eggs were much incubated, and contained down-clad young. Both females were shot at the nests, and are, with the eggs, in the Stockholm Museum. The males were seen when we commenced proceedings, but disappeared when we started to get at the nests." Professor Newton, who did not succeed in finding the eggs of the Ivory Gull in Spitsbergen, writes (*Ibis*, 1865, p. 508) as follows:—"I am, however, inclined to think that the Ivory Gull breeds sporadically on many other parts of Spitsbergen proper. Several of the examples we shot, both in Ice Sound and Stor Fjord, had their bellies bared of feathers, as usual in sitting birds; but I could not learn from any of the walrus-hunters we met that they had ever discovered a breeding-place, except that our pilot told me that a ship's boat which, in 1859, succeeded in reaching Giles Land, found many Ivory Gulls' nests on its lonely shore. This species, like other Gulls, probably does not always breed in colonies; and as it is sure to select the most inaccessible place for that purpose, an occasional nest here and there on the mountains or crags might well escape notice. Mr. Wolley, as I remarked before the Zoological Society (*P. Z. S.* 1861, p. 401), was told of a breeding-place which the Quæns in their language called 'Porro Vaara' (*i. e.* Reindeer Hill); but I have since ascertained that this name is often applied to a considerable portion of Spitsbergen; the information therefore is less precise than I formerly thought."

Holböll tried to establish a second species of Ivory Gull under the name of *Larus brachytarsus*; but it appears that it cannot stand. It is supposed to differ in having the wing longer, the tarsus shorter, and the bill darker and tipped with bronze; but these differences seem not to be constant, and I have therefore placed this name under the list of synonyms of the present species, which, I may add, I find, even in the small series I have examined, differs not a little in the measurements of the individual specimens.

The specimens figured are an adult male in my own collection, and an immature bird in the collection of Mr. Howard Saunders.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a, ad.* Spitsbergen, summer of 1870. *b, ad.* Egedesminde, N. Greenland (*A. Benzon*). *c, juv.* Egedesminde (*Erichsen*). *d, juv.* Greenland (*Dr. O. Finsch*).

*E Mus. Howard Saunders.*

*a, juv.* Egedesminde, 1866.

## Genus LARUS.

- Larus*, Brisson, Orn. vi. p. 160 (1760).  
*Gavia* apud Brisson, tom. cit. p. 189 (1760).  
*Xema* apud Boie, Isis, 1822, p. 563.  
*Leucus* apud Kaup, Natürl. Syst. p. 86 (1829).  
*Ichthyaetus* apud Kaup, op. cit. p. 102 (1829).  
*Hydrocolæus* apud Kaup, op. cit. p. 113 (1829).  
*Laroides* apud C. L. Brehm, Vög. Deutschl. p. 738 (1831).  
*Chroicocephalus* apud Eyton, Hist. Rar. Brit. B. p. 63 (1836).  
*Glaucus* apud Bruch, J. f. Orn. 1853, p. 101.  
*Dominicanus* apud Bruch, tom. cit. p. 100.  
*Gavina* apud Bonaparte, Naumannia, 1854, p. 212.  
*Gelastes* apud Bonaparte, tom. cit. p. 216.  
*Meligavia* apud Bonaparte, tom. cit. p. 213.  
*Rissa* apud Bonaparte, Cat. Parzud. p. 11 (1855).  
*Laroides* apud Bruch, Naumannia, 1855, p. 282.  
*Chloirocephalus* apud C. L. Brehm, Vogelfang, p. 343 (1855).  
*Clupeilarus* apud Bonaparte, Consp. Gen. Av. ii. p. 220 (1857).  
*Plautus* apud Bonaparte, tom. cit. p. 215 (1857).  
*Kroïkocephalus* apud Jerdon, B. of India, ii. p. 831 (1863).  
*Chroocephalus* apud Salvadori, Faun. d'Ital. Ucc. p. 287 (1872).

THIS genus is a large and very widely distributed one, being represented in the Palæarctic, Ethiopian, Oriental, Australian, Nearctic, and Neotropical Regions—in fact, in most parts of the globe—fourteen species being found in the Western Palæarctic Region. By many authors this genus has been considerably subdivided; indeed most authors separate the species which have the heads black or brown in summer dress, under the generic title of *Chroicocephalus*; but this peculiarity does not appear to have any generic value, and I have deemed it best not to recognize this genus.

The Gulls inhabit the shores of the ocean, as well as inland sheets of water. They are nomadic in their habits, wandering about from place to place according as they find an abundance of food. Their flight is light, wavering, and tolerably swift; they swim buoyantly and with ease, and walk well. They feed on aquatic and marine insects, worms, fishes, crustacea, &c.; and some species will devour carrion and catch and eat small mammals, young birds, &c. They breed in large communities, placing their nests either on the ground or on ledges of cliffs, some species even nesting occasionally on trees. They build either bulky or slight nests of aquatic herbage, grasses, &c., and deposit from two to four eggs, which vary considerably, some being dull white in ground-colour, others dull olivaceous or ochreous, spotted and blotched with different shades of brown.

*Larus canus*, the type of the genus, has the bill shorter than the head, moderately stout, straight, the upper mandible decurved at the tip, rather compressed, the lower mandible

narrower, compressed, the intercrural space long and narrow; nostrils median, linear oblong, rather large; wings long, full, pointed, the first quill longest, the second nearly as long; tail moderate, nearly even or slightly rounded; legs moderate, slender, the tibia bare for a short distance; tarsus slender, scutellate; hind toe small, elevated; anterior toes moderately long, slender, the interdigital membranes emarginate, the lateral toes margined externally by a thick scaly membrane; the soles flat and granulated; claws small, slightly curved, obtuse, that on the middle toe with the inner edge slightly dilated.

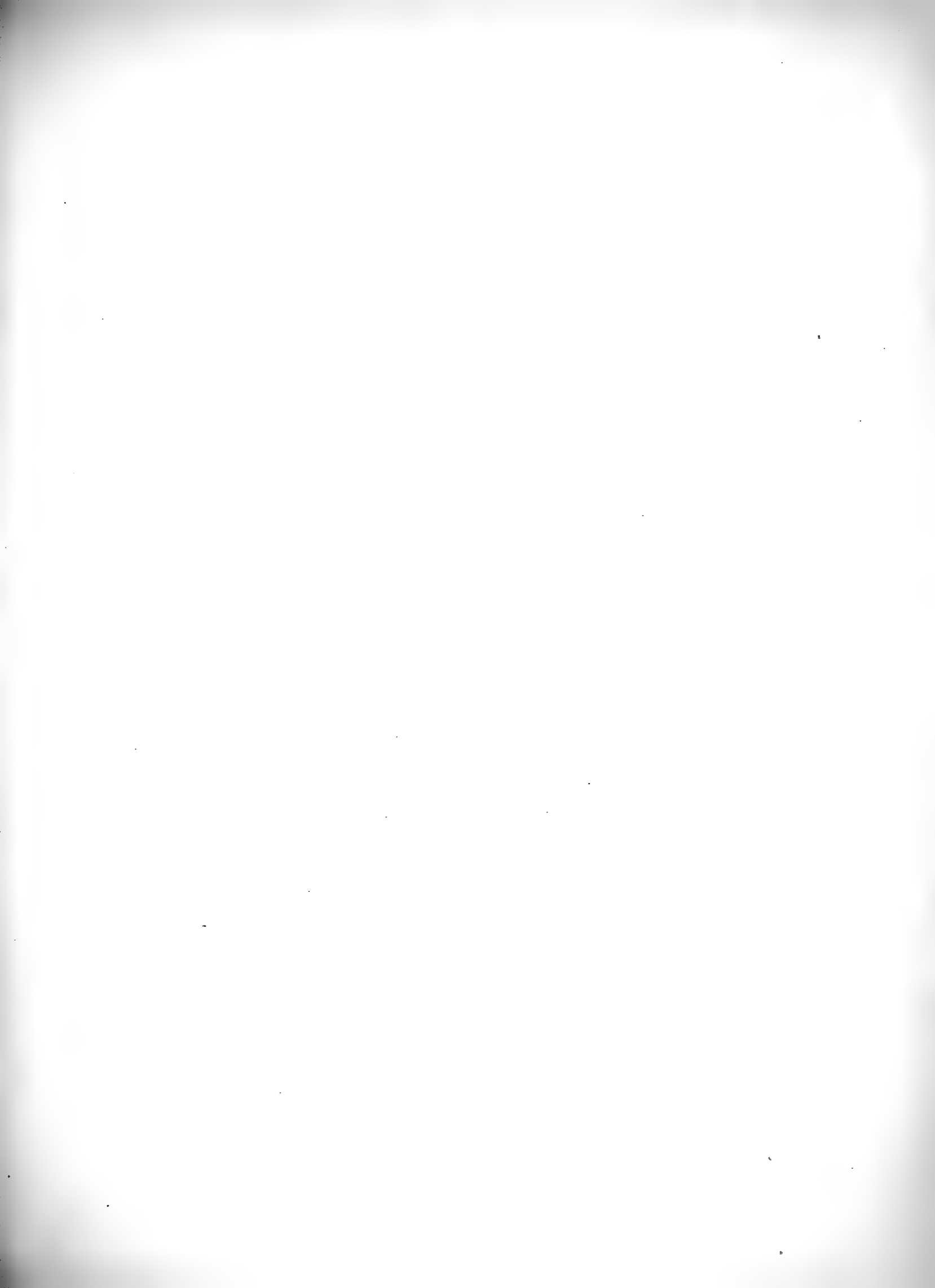
Besides the species which I have included in the present work, several other Gulls have been included in the European avifauna, though, so far as I can judge, on insufficient evidence. Of these I may name the following, viz.:—

*Larus leucophthalmus*, Licht., which inhabits the Red Sea and, according to Temminck, visits Greece and the shores of the Bosphorus; but recent collectors have never obtained it there.

*Larus hemprichi* (Bp.). Of this species, which inhabits the Red Sea and the western coasts of India, a specimen is stated by M. Vian to have been obtained on the coast of Nice with an example of *Larus leucophthalmus*; but both examples came through dealers' hands, and are (to say the least) doubtful.

*Larus atricilla*, an American species of Black-headed Gull, is stated to have occurred in the Mediterranean; but recent research has proved that *Larus melanocephalus* has been mistaken for this species. There is a specimen in the British Museum said to have been obtained at Winchelsea, Sussex, by Col. Montagu.

*Larus philadelphiae*, Ord, a Nearctic species, is said to have been obtained in Great Britain; but I am very sceptical as to this being the case, as specimens said to be referable to this species, which have on several occasions been submitted to me for examination, have invariably proved to be immature and small examples of *Larus ridibundus*. They may readily be distinguished from that species, inasmuch as in all plumages *Larus philadelphiae* has the inner webs of the primaries white or pale grey, the undersurface of the closed wing being, therefore, quite light; whereas in *Larus ridibundus* the inner webs of the quills are broadly bordered with sooty blackish, the undersurface of the wing being, to a large extent, sooty blackish.



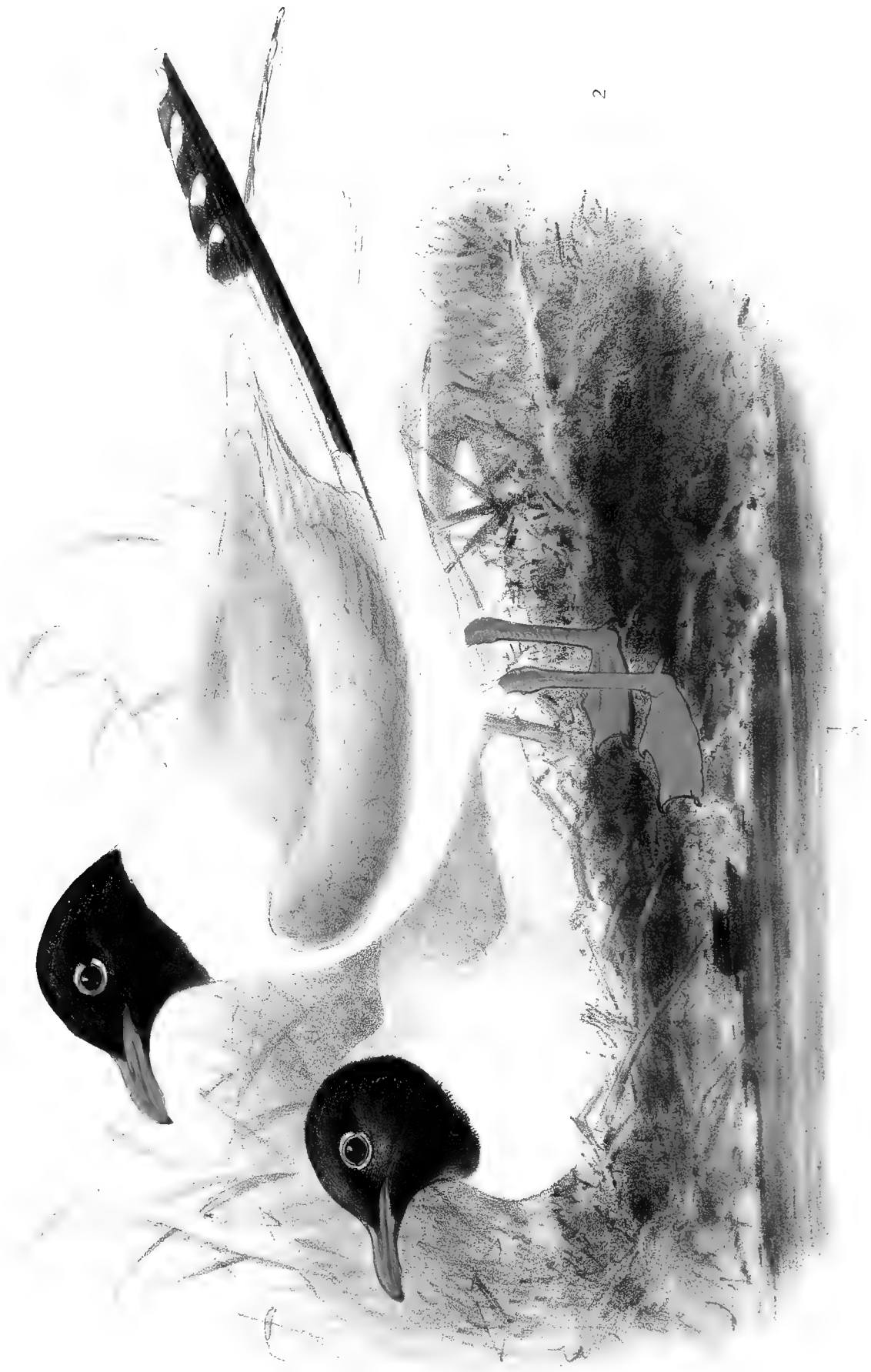


habitat 101

JG Keulemans lith.

BLACK-HEADED GULL.  
WINTER AND YOUNG.





1. BLACK-HEADED GULL.  
LARUS R. DIBUNDUS  
2. ADRIATIC GULL.  
LARUS MELANOCEPHALUS.

John Richardson Lib.

Harvard Univ.

## LARUS RIDIBUNDUS.

(BLACK-HEADED GULL.)

- Larus gavia ridibunda*, Briss. Orn. vi. p. 192, pl. xviii. fig. 1 (1760).  
*Larus gavia ridibunda phænicopos*, Briss. tom. cit. p. 196 (1760).  
*Larus gavia cinerea minor*, Briss. tom. cit. p. 178 (1760).  
 ?*Larus cinerarius*, Linn. Syst. Nat. i. p. 224 (1766, ex Briss.).  
*Larus ridibundus*, Linn. tom. cit. p. 225 (1766, ex Briss.).  
 ?*Larus cinereus*, Scop. Ann. i. Hist. Nat. p. 80. no. 105 (1769).  
*La Mouette rieuse*, Buff. Hist. Nat. Ois. viii. p. 433 (1781).  
*Larus erythropus*, Gmel. Syst. Nat. i. p. 597 (1788).  
*Larus canescens*, Bechst. Orn. Taschenb. p. 370 (1803).  
*Larus atricilla*, Pall. Zoogr. Rosso-As. ii. p. 324 (1811, nec Linn.).  
*Larus nævius*, Pall. tom. cit. p. 327 (1811).  
*Larus capistratus*, Temm. Man. d'Orn. 2nd ed. ii. p. 785 (1820).  
*Xema ridibundus* (L.), Boie, Isis, 1822, p. 563.  
*Xema capistratus* (Temm.), Boie, ut suprâ.  
*Xema ridibundum* (L.), C. L. Brehm, Vög. Deutschl. p. 760 (1831).  
*Xema pileatum*, C. L. Brehm, op. cit. p. 761 (1831).  
*Xema capistratum* (Temm.), C. L. Brehm, op. cit. p. 762 (1831).  
*Chroicocephalus capistratus* (Temm.), Eyton, Hist. Rar. Brit. B. p. 63 (1836).  
*Chroicocephalus ridibundus* (L.), Eyton, Cat. Brit. B. p. 53 (1836).  
*Gavia ridibundus* (L.), Bp. Naumannia, 1854, p. 213.  
*Gavia capistratus* (Temm.), Bp. ut suprâ.  
*Chloirocephalus* (sic) *pileatus*, C. L. Brehm, Vogelfang, p. 343 (1855).  
*Chroicocephalus minor*, C. L. Brehm, ut suprâ (1855).  
*Chroicocephalus pileatus*, L. Brehm, Naumannia, 1855, p. 295.  
 ?*Larus brunneicephalus*, Cass. in Perry's Exp. Japan, ii. p. 233 (1856).  
*Chroocephalus ridibundus* (L.), Salvadori, Faun. d'Ital. Ucc. p. 287 (1872).  
*Larus cahirinus*, Hempr. & Ehr. in Mus. Berol. fide Saunders, P. Z. S. 1878, p. 201.  
*Larus cahiricus*, Ehr. in Mus. Berol. fide Saunders, ut suprâ.

*Ceann-Dhuban*, Gaelic; *Goéland rieur*, French; *Gabbiano comune*, Italian; *Lachmewe*, *Mohrenkopf*, German; *Kokmeeuw*, Dutch; *Hættemaage*, Danish; *Lattermaage*, Norwegian; *Skrattmåse*, Swedish; *Naurulokki*, Finnish; *Tschäika*, *Kloucha*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 969, 970; Werner, Atlas, *Palmipèdes*, pl. 19; Kjærb. Orn. Dan. taf. 41, and Suppl. taf. 22; Fritsch, Vög. Eur. taf. 55. fig. 9, 57. fig. 7; Naumann, Vög.

Deutschl. taf. 260; Sundevall, Svensk. Fogl. pl. 49. figs. 2, 3; Gould, B. of Eur. pl. 425; id. B. of G. Brit. v. pl. 64; Schlegel, Vog. Nederl. pls. 352, 353, 354; Bettoni, Ucc. Lomb. pl. 98.

*Ad. ptil. æst.* capite et collo superiore nigro-fuscis, in parte imâ nigris, oculis albo marginatis: stragulo pallidè cano: caudâ, supracaudalibus et corpore toto subtùs albis: remigibus primariis albis, in pogonio interno nigro marginatis et eodem colore apicatis, remige extimo in pogonio externo fere ad apicem nigro, secundariis canis, extimis nigro apicatis: rostro et pedibus rubris: iride fuscâ.

*Ad. ptil. hiem.* capite haud nigro, sed albo, vittâ anteoculari et vittâ in regione paroticâ nigrificanti-cinereis.

*Juv.* præcedenti similis, sed tectricibus alarum minoribus fusco notatis, nuchâ fusco-cinereo lavatâ, remigibus magis nigro marginatis, caudâ nigro terminatâ, rostro nigrificante, mandibulâ ad basin incarnatâ, pedibus incarnatis, iride fuscâ.

*Adult Male in summer* (Volga, 1st April). Head brownish black, becoming quite black on the lower part, this colour extending further down on the throat, a narrow space round the eye white; mantle pale French-grey or gull-blue; tail, upper tail-coverts, entire underparts, and neck pure white; primaries white, tipped and on the inner web broadly margined with black, the first quill with the outer web black nearly to the tip; outer secondaries gull-blue tipped with blackish, this colour extending somewhat up the inner web; inner secondaries like the back; underparts faintly tinged with rose-colour; bill, edges of eyelids, and legs deep carmine; iris deep brown. Total length about 15 inches, culmen 1·8, wing 12·0, tail 5·0, tarsus 1·8.

*Adult Female* (Volga). Resembles the male, but is rather smaller in size.

*Adult in winter* (Acarmania, 10th February). The blackish-brown hood is entirely wanting, the head and neck being pure white with a dark-grey space before the eye and a black-grey patch behind the eye.

*Young in first plumage.* Head white, lores greyish; forehead tinged with rusty yellow; a large blackish spot before the eye and a larger greyish-brown patch on the auricular region; nape tinged with greyish brown; breast yellowish white, becoming more rusty yellow on the sides; upper back and shoulders brown, the feathers margined with rusty yellowish; lower back gull-blue, becoming white on the rump and upper tail-coverts, the latter with a few rusty-yellowish edges; wing-coverts gull-blue marked with brownish; quills broadly margined with black; tail white with a broad brownish-black tip.

*Young in autumn* (Pagham, 8th October). Differs from the adult in winter in having the nape marked with brownish grey, the lesser wing-coverts marked with brown, the tail with a terminal blackish band, and the quills with broader black margins, the second quill having the terminal half of the outer web broadly margined with black, and the third with about the terminal third thus marked; upper mandible blackish, the lower mandible flesh-coloured tipped with blackish; legs flesh-coloured; iris brown.

*Young in down* (Norfolk). Covered with close down on the upper parts, pale yellowish brown, spotted with blackish brown; lores and a large semicircular mark on each side of the throat blackish brown; rest of the underparts buffy white, the flanks marked with greyish brown; bill reddish white; feet plumbeous.

FROM Western Europe to Eastern Asia and from Scandinavia down to Northern Africa the present species is generally distributed in suitable localities. With us in Great Britain it is to

be met with at all seasons of the year; and large numbers breed in some localities. Mr. A. G. More states (*Ibis*, 1865, p. 454) that it is more numerous in the north, but that it has breeding-stations in Kent, Essex, Norfolk, and Lincolnshire. The largest of these gulleries is said to be that at Scoulton mere, in Norfolk; but it appears to be decreasing,—as, according to Lubbock, in 1845, in an average season, about 30,000 eggs were taken; in 1860, according to Mr. J. H. Gurney, jun., about 16,000 were gathered; and in 1876, Mr. G. D. Rowley writes (*Orn. Misc.* ii. p. 408), 6000 were taken. During the winter season this Gull is found all round our coasts, but not so much inland as in the breeding-season.

Mr. Hancock says (*B. of North. & Durh.* p. 140), it is “resident and common in Northumberland and Durham, breeding gregariously on the marshy borders of lochs and tarns, and is a great ornament to all wild moorland districts. But it is much to be feared that it will in time be exterminated, as it has fallen into disrepute with the game-preserve. On the 26th of May, 1859, I counted by the margin of Fallowlee, a pool of no great extent, a little south of Simonside, four hundred eggs of this bird; but now, I believe, it no longer breeds in that locality. A few pairs used to nest at Prestwick Car. It breeds at Harbottle Tarn, at Sweethope, and at Pallinsburn; at the latter place, being well protected, it is as abundant as ever.” Mr. Robert Gray writes (*B. of W. of Scotl.* p. 476):—“This Gull is very abundant in the west of Scotland, extending to all the outer islands. Its breeding-haunts are also numerous throughout those districts in which it meets with encouragement. I have visited many of these on the mainland, and on both groups of islands, and find a great similarity in choice of situation, construction of nests, time of breeding, and general habits of the birds in localities widely apart. The two best known to myself are both within easy reach of Glasgow. One of these interesting nurseries is on a small marshy islet in Hairlaw Loch, a patch of water, partly artificial, situated near Neilston Pad, which is within full view of the city. There are perhaps from 500 to 800 pairs to be found breeding there every year. Another numerous colony of Black-headed Gulls has for many years frequented the Island of Inchmain, on Loch Lomond. This island, which is about two miles in circumference, is quite flat, and stands but little above the level of the water. In wet seasons, therefore, it is to a great extent converted into a wet marsh. About the centre, where the ground is firmer, the Gulls construct their nests, which in some cases measure about eight inches in height, so that the contents are always safe against damp. Here, as well as at Hairlaw, many of the nests contain four eggs, though three is the usual number.” Dr. Saxby says that it occurs in Shetland throughout the year, frequenting the lochs near the sea.

In Ireland, according to Thompson, it is the commonest Gull in Belfast Bay, where it is to be seen throughout the year, except during the breeding-season. It breeds, he says, throughout Ireland in suitable localities; and several of the larger gulleries are enumerated by him.

It has not been known to straggle as far as Greenland or Iceland, and is very rare in the Færoes; but Mr. Müller found it breeding there in June 1869. In Norway, Mr. Collett informs me, it is rare, and is only found breeding sparingly on small lakes near Stavanger and Bergen. In 1867 it bred in two or three places on Jæderen, near Stavanger, but has not been observed there since. One was shot in 1855 on the Christiania fjord, and one, an immature bird, near Christiania in 1876. In Sweden, Nilsson says, it is almost confined to the southern provinces. It arrives late in March or early in April, and resorts to inland waters to breed; but in the

autumn before it leaves it is not unfrequently seen on the coast. On the coast of Finland it has been known to occur sparingly as far north as Gamla Karleby; and, according to Nylander, it has been seen on Karlö, off Uleåborg. Palmén gives (Finl. Fogl. ii. pp. 614-616) full details respecting the various occurrences on record, and states that it has been found nesting at Gammelstadsvik, near Wiborg, and near the village of Härkäpää, in Eastern Nyland, in which last-named locality large numbers came to breed in 1870 and 1871.

According to Mr. Sabanäeff it is the commonest of the Gulls and Terns in Central Russia, but does not range very far north. It is found in the south-western portions of the Vologda Government, but is rare in that of St. Petersburg. Meves writes that he met with it only near the town of Novaja Ladoga, and at the southern end of Lake Onega. In the Ural range, Mr. Sabanäeff says, it was common in every part he visited.

Mr. Taczanowski states that it is numerous in Poland, being the only species of Gull that nests there; for it breeds on the lakes and in several of the marshes in the eastern portion of the Lublin Government and on Lake Goplo. It breeds on many of the inland lakes in North Germany, according to Borggreve, from the extreme end of Prussia and Silesia to Oldenburg; and Naumann says that inland in Germany it is the commonest species of Gull, and breeds even in Anhalt. According to Mr. Collin it breeds in Denmark in large colonies in many parts of the country, but is only a summer visitant. So large are some of the colonies that at the Sperring Sö alone about 16,000 eggs and 600 young birds are sold annually. Baron von Droste Hülshoff says that it nests not uncommonly in East Friesland, and visits the island of Borkum in August, being numerous until November, many or few remaining over the winter according to the season. Mr. H. M. Labouchere informs me that it breeds commonly in Zeeland on the meres, arriving in April and leaving in September. It is said to be very numerous on the coasts of Belgium, and is found on the Meuse and in the larger marshes; and in France it is to be met with at all seasons of the year, on the coasts in winter and on passage and inland during the nesting-season. Professor Barboza du Bocage speaks of it as being abundant in Portugal; and in Spain it is said to be common in winter. Vidal says that it used to breed at the Albufera, near Valencia; but when Mr. Saunders was there he could find no trace of it. Schinz says that it is found throughout the year in Switzerland; and it is met with in autumn and winter on the coasts of Italy, being common also in Sardinia throughout the year, breeding there in some numbers. In Malta, according to Mr. C. A. Wright, it is by no means so numerous as *Larus melanocephalus*, with which it associates, and occurs there in winter, but he never obtained it in summer dress.

It is not uncommon in Southern Germany; and Fritsch says (J. f. O. 1872, p. 374) that it "breeds numerously in Southern Bohemia, the principal breeding-places being the Weissshurk pond, the Blatec pond, near Cejkovic, and the Vlkover pond. At the last-named gullery the birds are protected, and the numbers must be very great, as previously as many as 3000 young birds were annually taken, besides eggs, which now are also not allowed to be taken. A few pairs breed on the rivers not far from Prague, near Branik, Roztok, &c." The late Mr. E. Seidensacher informed me that it is occasionally met with in Styria; it is not rare in spring in Transylvania; and I have examined specimens from Turkey in summer plumage. Dr. Krüper says that it is very common in winter in Greece and Asia Minor, but he is unaware if it breeds there.

Canon Tristram (*Ibis*, 1868, p. 330) met with it on the lake of Galilee, in Palestine, and says that it is numerous on the coast in winter.

It is found in Northern Africa; and, according to Professor Schlegel (*Mus. Pays-Bas, Larus*, p. 37), it ranges as far south as the Cape of Good Hope; but this statement lacks confirmation; for, so far as I can judge, it appears to be restricted to the northern portion of that continent. Captain Shelley says (*B. of Egypt*, p. 309):—"This Gull is extremely abundant in Lower and Middle Egypt, where it remains the whole year; but I know of no instance of its capture in Nubia. During March 1870, when there was a plague of locusts in the land, we met the present species far up the river in large flocks, busily engaged devouring these insects." Von Heuglin says that it is common in winter and up to April in the Delta, near Alexandria, Damietta, &c., on the lagoons and lakes at the mouth of the Nile, and on the Nile itself to Assouan and Northern Nubia. During the summer it is much less common; but he thinks that it may breed there. Hemprich and Ehrenberg state that it occurs on the Red Sea. Loche records it as being tolerably common in Algeria; and Favier says that it is the commonest Gull near Tangier, arriving during November, and leaving for the north in March.

In Asia the Black-headed Gull is met with right across the continent to Japan. It occurs on the Caspian, and breeds, Dr. Severtzoff says, throughout Turkestan in suitable localities. According to Dr. Jerdon (*B. of India*, ii. p. 832), this Gull is "found in the Bay of Bengal, and at the mouths of the Ganges and the Hooghly in considerable numbers. It appears to be less common in the south of India, where I never observed it. This Gull is stated by Adams to breed on the lakes of Ladakh;" and Mr. Hume writes (*Stray Feathers*, i. p. 278) that he "found it pretty common in the larger rivers of the Punjab, in the Indus, in Sindh, about most of the larger inland lakes of the latter province, about the Kurrachee Harbour, along the Mekran coast, and at Muscat. All the specimens procured were in winter plumage, except a single female shot at Muscat, on the 23rd February, which had assumed the dark hood, though other birds, killed at the same place and on the same day, as yet showed no signs of the breeding-plumage." In Siberia the present species is widely distributed. Von Middendorff obtained it on the south coast of the Sea of Ochotsk, and on the large Schantar Island. Von Schrenck speaks of it as being one of the commonest Gulls throughout the Amoor country, and adds that it breeds in the swamps near the Nikolaieffsk post; and Dr. Radde remarks that the first appeared in the Bureja Mountains on the 28th March (O. S.), and at Dsüun-Tarei on the 23rd April, the major portion migrating from North Mongolia late in August. Blakiston records it from Kamtschatka; it occurs in Japan; and Swinhoe says that it is found in Macao and Amoy, and is a rare winter visitant to the south of China.

In habits the present species differs from most of the Gulls which breed with us in Great Britain in selecting for its nesting-places marshy localities inland and not on the sea-coast; and it may be described as being essentially a marsh-haunting species during the season of nidification. When there are trees near its breeding-haunts it does not hesitate to perch on them; and at some of the gulleries large numbers of these birds may be seen seated on the trees and bushes. It walks with ease and grace, nodding with its head as it steps daintily along; but it appears to prefer resting on the water to standing on the ground. It swims with great facility, and sits as

lightly on the water as a feather, rising with the greatest facility from the surface when it takes wing. Its flight is noiseless and graceful; and though its movements are easy, it is very swift on the wing. Frequently it will rise very high in the air, and fly in wide circles almost out of sight; and at others it remains hovering about near the surface of the water. On the whole it is much more on the wing than on the ground or water, and may be said to spend the major portion of its life in the air.

Its note is a harsh, almost corvine, call; still it is not disagreeable, especially when uttered by many together. It resembles the syllables *kree kree* or *kech kech*, and, when uttered by many voices, somewhat resembles harsh laughter, whence its name in many parts of Europe.

As above stated, the present species breeds inland and not on the sea-coast, the localities selected being islands in lakes or marshy places, usually such as are tolerably well surrounded by water, and therefore safe from the depredations of four-footed vermin. The nests are constructed of reeds and dried grass, and, though not so neatly formed as those of many of the other Gulls, are tolerably well built. They are placed either on the ground or on the down-trodden rushes.

The eggs are usually three in number, though sometimes four are deposited; and Thompson states that he has found even more in one nest; but in this case it is probable that two females had deposited their eggs in the same nest. The eggs are laid early in May or sometimes late in April; and after about seventeen days of incubation the young emerge from the shell. If the eggs are taken, they lay a second and a third time; and, according to Naumann, even a fourth clutch of eggs has been known to be deposited. The young birds when undisturbed remain in the nest until able to fly or flutter along, but when frightened will take to the water and swim or even dive to evade pursuit. They are fed by the old birds with insects, worms, and larvæ, which these disgorge out of their gullets.

The food of the Black-headed Gull consists of small fish which are found in shallow water or swim near the surface, insects, insect-larvæ, and worms. Where ploughing is being done near their breeding-stations, they follow the plough and pick the worms and insects out of the fresh-turned furrow, and are thus of infinite use to the husbandman.

The eggs of this Gull vary extremely. In not a very large series in my own collection I have specimens varying from pale bluish white, marked with only a few dots, to deep olivaceous brown, richly blotched with deep umber and blackish brown. The usual type appears to be an egg with the ground-colour pale olive-brown, spotted and blotched with purplish brown shell-markings and dark umber-brown surface-spots. In size those I have before me vary from  $1\frac{3}{4}$  by  $1\frac{1}{4}$  to  $2\frac{8}{10}$  by  $1\frac{2}{4}$  inch.

The specimens figured are an adult male in full breeding-dress, on the same Plate with *Larus melanocephalus*, and a young bird in immature dress, with an adult bird in winter plumage, on the second Plate.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♀ *ad.* Thames, February 12th, 1870. *b*, ♂ *juv.* Pagham, Sussex, October 8th, 1865 (*R. B. Sharpe*).  
*c*, ♂, *d*, ♀. Lower Volga, April 1st, 1877 (*W. Schlüter*). *e*, ♂. Bosphorus, March 9th, 1871. *f*, ♂ *ad.*  
 Acarnania, February 10th, 1869 (*Dr. Krüper*). *g*, *h*, ♂. Turkestan, September 11th and 22nd, 1874  
 (*Severtzoff*). *i*, *pull.* Norfolk.

*E Mus. H. B. Tristram.*

*a*, ♂. Eastbourne, January 21st, 1867 (*J. H. Gurney, jun.*). *b*. Tiberias, February 27th, 1864. *c*, ♂. Palestine,  
 November 24th, 1863. *d*, ♀. Navarino, February 10th, 1858. *e*, ♂. Palestine, November 24th, 1863  
 (*H. B. T.*).



## LARUS MELANOCEPHALUS.

(ADRIATIC GULL.)

- Larus melanocephalus*, Natterer, Isis, 1818, p. 816.  
*Xema melanocephalus* (Natt.), Boie, Isis, 1822, p. 365.  
*Larus atricilloides*, Naccari, Orn. Venet. p. 22. no. 74 (1823).  
*Xema melanocephalon* (Natt.), C. L. Brehm, Vög. Deutschl. p. 757 (1831).  
*Xema caniceps*, C. L. Brehm, op. cit. p. 758 (1831).  
*Chroicocephalus melanocephalus* (Natt.), Bruch, J. f. Orn. 1853, p. 104.  
*Melagavia melanocephalus* (Natt.), Bp. Naumannia, 1854, p. 213.  
*Chroicocephalus* (sic) *melanocephalus* (Natt.), C. L. Brehm, Vogelfang, p. 342 (1855).  
*Chroicocephalus caniceps*, C. L. Brehm, Vogelfang, p. 343 (1855).  
*Gavia melanocephala* (Natt.), Bp. Compt. Rend. xlii. p. 771 (1856).  
*Gavia affinis*, Nardo, Att. Ist. Ven. ser. iii. vol. iv. p. 1056 (1858-59).  
*Larus atricilla*, Lilford, Ibis, 1860, p. 356, nec Linn.

*Goéland-mélanocéphale*, French; *Gauja*, Maltese; *Gabbiano corallino*, Italian.

*Figuræ notabiles.*

Gould, B. of Eur. pl. 427; Naumann, Vög. Deutschl. taf. 259; Bp. Faun. Ital. pl. 47. fig. 6.

*Ad. Laro ridibundo* similis, sed capite et collo superiore nigris nec nigro-fuscis, rostro robustiore et majore, remigibus albis, extimo in pogonio externo nigro marginato, rostro et pedibus corallinis: iride fuscâ.

*Juv. Laro ridibundo* similis, sed rostro robustiore, remigibus minus albido notatis nec in pogonio externo sed in pogonii interni dimidio externo griseo-albo marginatis.

*Adult in summer* (Bosphorus, 11th April). Differs from *Larus ridibundus* in having the hood jet-black instead of brownish black; the bill is stouter and rather larger, especially in old birds; the quills are white, the first quill alone having the outer web margined with black; bill and legs coral-red; iris brown. Total length about 14 inches, culmen 1·6, wing 12·0, tail 5·0, tarsus 1·9.

*Young*. Differs from the young of *Larus ridibundus* in the arrangement of colour on the primaries, there being much less white in the present species. In *Larus ridibundus* the white on the second, third, and fourth primaries extends to the shaft on the inner web, or over the shaft to the outer web, whereas in *Larus melanocephalus* the black extends over the whole of the outer web and to the middle of the inner web, this latter having the rest of the inner web greyish white, narrowly edged with blackish grey. In *Larus melanocephalus* the bill is much stouter.

*Adult in winter* (Asia Minor). Resembles *Larus ridibundus*; but the nape and hind neck are much more striated, not clouded with grey, and the quills are coloured as in the adult in summer above described.

*Obs.* I find in the series I have examined that (as stated by Mr. Saunders) the black head is often assumed

before the quills have lost the coloration of immaturity: I have examined several specimens which have the head black, and which still retain much black on the primaries, the black crossing both webs near the tip, and forming a subterminal bar.

THE present species inhabits the Mediterranean, ranging eastward as far as Asia Minor and the Black Sea, and as far west as the west coast of France. It has on one occasion been obtained even as far north as Great Britain; for Mr. Saunders states (*Ibis*, 1872, p. 79) that a specimen in the British Museum was, as he ascertained by careful inquiry, shot in January 1866 near Barking Creek by a waterman, who brought it to Mr. H. Whitely, of Woolwich, out of whose hands it passed into the British Museum. It has not been met with in any other part of Northern Europe, and is, indeed, of rare occurrence further north than Bordeaux. According to Naumann it has straggled into Central Germany, as he states that it has occurred on the Bodensee and Central Rhine, and a young bird was killed near Mayence in September 1822. Messrs. Degland and Gerbe merely record it as of accidental occurrence in France; but Mr. Howard Saunders states that it is annually obtained off Bordeaux; and, according to M. Adrien Lacroix, it breeds regularly in Aude and the Pyrénées Orientales. He received one from near Pinsaguel, twelve kilomètres south of Toulouse (where it is very rare), in February 1867. I have no data as regards its presence in Portugal; but Mr. Saunders states that it regularly ascends the west coast of the Iberian peninsula, and outside the Straits of Gibraltar he observed it, apparently breeding, in the marshes of Huelva. Colonel Irby, however, remarks that he only met with it in winter in the Straits, and never saw one with a black head. It is common on the coasts of Italy and Sicily; and Mr. A. B. Brooke states that it is extremely numerous from the Straits of Bonifacio northwards. Mr. Wright says (*Ibis*, 1864, p. 152), "This is the common Gull of Malta, and visits us very regularly at the time of its migration. It arrives in large flocks about the first week of December, and sometimes a little earlier. By the end of March, when it has assumed the pure black head of the breeding-plumage, it suddenly departs in search of suitable places for nidification. Not a single bird lingers behind; and all my endeavours to find it breeding here have proved in vain. It is very sociable in its habits." Lord Lilford, writing to me respecting the range of this Gull, says:—"I have never met with this species westward of Marseilles, but frequently observed it in the harbour of that town and at Toulon in the winters of 1873 and 1874 and 1874 and 1875. It is common all down the Italian coast in winter, also in Sicily, Malta, Tunis, all parts of the Adriatic which I have visited, Crete, and Cyprus. At Famagousta, in the latter island, we found this species in immense numbers in April 1875, evidently on migration, and obtained many specimens with the full black head. I could not discover that this Gull is known to breed in Cyprus. This species may be easily distinguished at a distance from *Larus ridibundus* (which is very abundant in many parts of the Mediterranean) by its cry, which is much harsher and of a different tone, closely resembling that of some of the Terns."

In Greece, Dr. Krüper says, it occurs sparingly and not every year; but it is stated by Colonel Drummond-Hay to be common in winter on the Ionian Islands; and doubtless this is the bird referred to by Lord Lilford (*l. c.*), under the name of *Larus atricilla*, as being common at Corfu. It is common in Turkey, and breeds in the Dobrudscha; and Messrs. Elwes and Buckley speak of it as being numerous in the Black Sea and the Levant. Dr. Krüper found it common

near Smyrna, large flocks passing inland during the day, returning to the coast in the evening. It arrived at Thessalonica about the 13th April, and at Smyrna from the 5th to the 25th April; and he obtained an old male near there on the 16th August. He adds that it is frequently met with in the corn-fields hunting after insects, and it certainly breeds near Smyrna and Salonica, but he was unable to find its breeding-stations. Canon Tristram records it as being abundant at Jaffa; and it occurs in North-east Africa. Von Heuglin says that it is not rare during winter on the coast of Egypt and the lagoons of the Delta, and is found, he adds, in pairs or small flocks, occasionally in company with Black-headed Gulls, on Lakes Mareotis and Etku. He thinks that it may possibly breed in Lower Egypt. According to Dr. A. E. Brehm it has been met with in Nubia.

In habits this Gull is said to assimilate closely to *Larus ridibundus*; but, as above stated, its cry differs from the cry of that species, and enables one to distinguish it when at a distance.

But little is known about its breeding-habits; and its eggs are still somewhat rare in collections. It certainly breeds on the coast of Asia Minor and near Kustendji, at which latter place its eggs have been taken by Dr. Cullen. This gentleman says that its nest resembles that of the Slender-billed Gull, and it breeds in the same localities. Dr. Bree, in an article in the 'Field,' says of these eggs, which were sent to him for examination, "they differ, like those of *Larus ridibundus*, very much in size and colour; but I have compared them with one hundred specimens of the latter in my collection, and they differ markedly from that motley crew. They are deficient in one great character of the British egg, viz. the prevailing shade of green which, as a rule, pervades the latter, but which is entirely absent in the fourteen eggs sent to me. In size they vary from  $1\frac{9}{10}$  inch long by  $1\frac{3}{10}$  inch broad, the smallest, to  $2\frac{1}{2}$  inches by  $1\frac{1}{2}$  inch, the largest. The ground-colour varies from a dirty white in seven specimens to light yellowish brown in four, and a darker tint of the same colour in three. One specimen has a few scattered spots of umber-brown, and another a few spots and streaks of the same colour. Two have more and larger, and two more and smaller and distincter spots, of two shades of the same colour. In three the colourings are of a richer brown, and are more thickly spotted and streaked at the larger end; while the remainder are marked more regularly, without any zone, with the same two-shaded spots."

I possess three eggs said to be those of this species, which were sent to me by Von Gonzenbach from near Smyrna, and which agree closely with the above description of Dr. Cullen's eggs,

The specimen figured, on the same Plate with *Larus ridibundus*, is an adult in full summer dress. I have not figured this bird in winter plumage and immature dress, as it so closely resembles the Black-headed Gull, from which, however, it may readily be distinguished by its much stouter bill.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Smyrna, August 16th, 1871 (*Dr. Krüper*). *b*, ♀ *ad.* Bebec Bay, Bosphorus, April 11th, 1867 (*Robson*). *c*, *ad.*, *d*, *juv.* Coast of Asia Minor, winter.

*E Mus. Lord Lilford.*

*a*. Torre della Nunziata, March 3rd, 1874. *b*, ♂, *c*, ♀. Harbour of Naples, February 10th, 1874. *d*, *e*, *juv.* Bay of Naples, February 12th and 13th. *f*, ♂. Near Catania, Sicily, March 28th, 1874. *g*, *juv.* Corfu, winter, 1857. *h*, ♀. Souda Bay, Crete, March 30th, 1875. *i*, *k*, ♀. At sea, off Livadhia, Cyprus, April 23rd, 1875.

*E Mus. Howard Saunders.*

*a*, bird of year, and *b*, *imm.* Trocadero, S.W. Spain (*F. Forrester*). *c*, ♂ *ad.* Malaga, January 30th, 1872 (*Rios*). *d*, *ad.* Valencia, winter (*R. Martin*). *e*, ♀ *juv.* Palermo, March 1870 (*Doderlein*). *f*, ♀ *juv.*, *g*, ♀ *ad.* Malta, February 1871 (*C. A. Wright*). *h*, ♀ *ad.* Eubœa, February 9th, 1869 (*H. J. Elwes*). *i*, *j*, ♀ *ad.* Bosphorus, April 11th, 1867 (*Robson*). *k*, *pullus*. Knasil, Black Sea, June 4th, 1872 (*Cullen*).

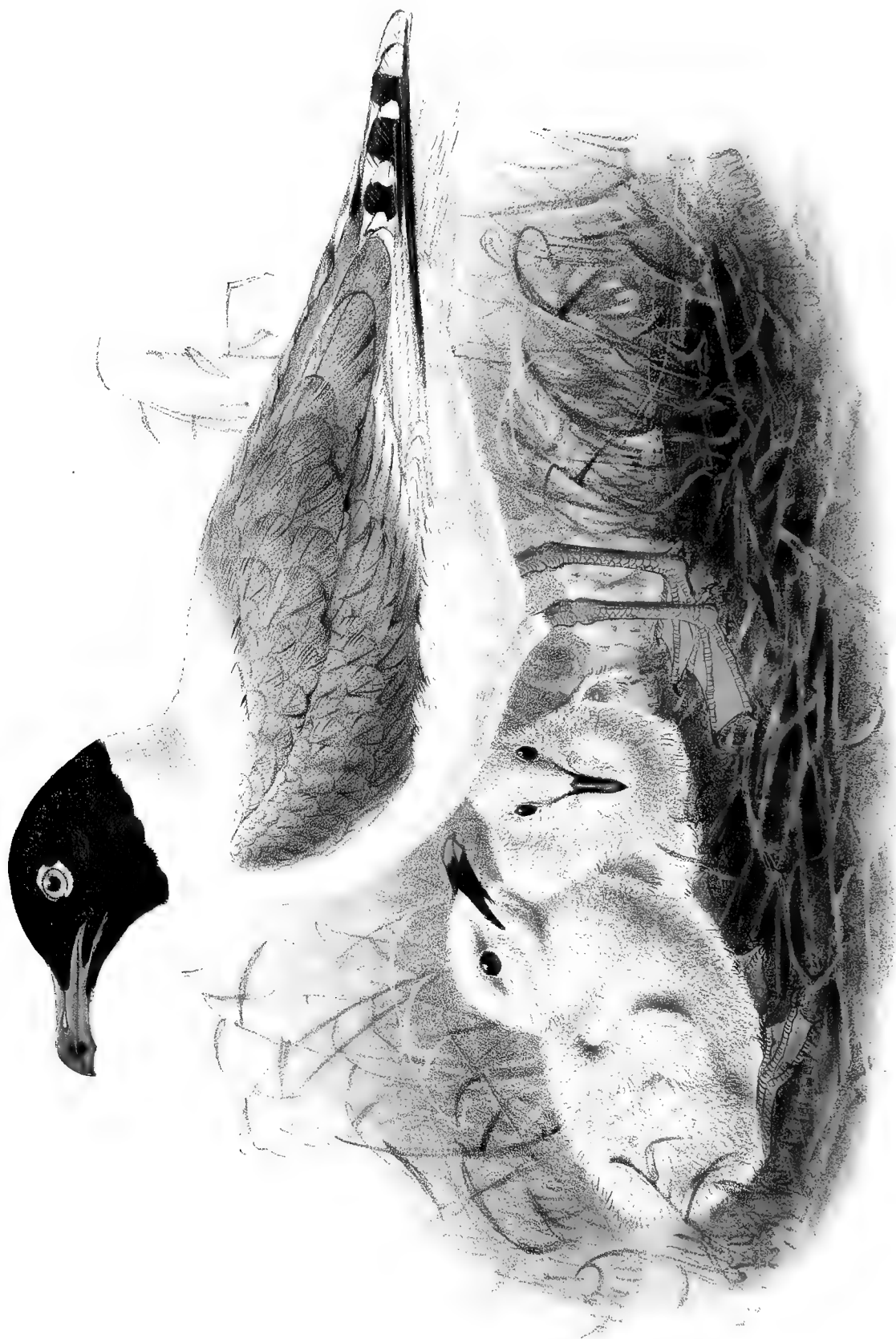
*E Mus. H. B. Tristram.*

*a*, ♀. Malta, January 25th, 1858 (*C. A. Wright*). *b*. Dobrudscha (*Dr. Cullen*).

*E Mus. C. A. Wright.*

*a*, *b*. Malta, spring (*C. A. W.*). *c*, *d*. Malta, February 1871 (*C. A. W.*).





GREAT BLACK HEADED GULL.  
LARUS ICHTHYAETUS  
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## LARUS ICHTHYAETUS.

(GREAT BLACK-HEADED GULL.)

*Gavia ridibunda phaenicopos*, S. G. Gmelin, Reise durch Russl. i. p. 152 (1770).*Larus ichthyaetus*, Pall. It. ii. App. no. 27 (1776).*Larus ichthyaetus*, Pall. Zoogr. Rosso-As. ii. p. 322 (1811-1831).*Ichthyaetus pallasii*, Kaup, Nat. Syst. p. 102 (1829).*Xema ichthyaetus*, Bp. B. of Eur. p. 62 (1838).*Larus kroikocephalus*, Jameson, Journ. As. Soc. viii. p. 242.*Kroikocephalus ichthyaetus*, Jerdon, B. of Ind. ii. p. 831 (1863).*Chroicocephalus ichthyaetos*, Swinh. P. Z. S. p. 327 (1863).*Larus ichthyaetus minor*, Schlegel, Mus. Pays-Bas, p. 34 (1863).*Rybak*, *Gluchar*, Russian; *Charabalta*, Tartar (fide Pallas).*Figuræ notabiles.*

S. G. Gmel. tom. cit. pls. 30, 31; Rüppell, Atlas, pl. 17; Gould, B. of E. pl. 435; Bree, B. of Eur. vol. iv.

♂ *ad.* albus: capite colloque superiore nigris, suprâ et sub oculum maculâ albâ: dorso, scapularibus tectricibusque alarum stragulum formantibus pallidè cærulescenti-cinereis: remigibus albis, primario externo in pogonio externo fere ad apicem nigro, primariis omnibus fasciâ nigrâ ante apicem transfasciatis sed in primariis intimis ad maculam nigram diminutâ: secundariis externis albis, intimis cærulescenti-cinereis, conspicue albido apicatis: rostro flavo, fasciâ subapicali nigrâ et pone apicem rubro notatâ: pedibus flavis: iride brunneâ: marginibus palpebrarum miniatis.

*Juv. ptil. hiem.* albus: stragulo ut in adulto, pileo imo et collo postico griseo-fusco striatis: primariis nigris, ad basin et apicem albis: primario externo maculâ ovatâ albâ in pogonio interno: caudâ albâ, fasciâ subapicali nigrâ, rostro saturatè flavo ante apicem nigro transfasciato.

*Pullus.* lanugine indutus, suprâ saturatè griseo-albus, capite et collo paullo grisescentioribus: subtùs albus, collo hypochondriisque vix griseo lavatis: rostro nigrescente, ad apicem flavo.

*Male* (Volga, May). Entire head and upper part of the neck jet-black; above and below the eye a white spot; lower part of the neck, upper part of the back, tail, and entire underparts pure white; back, wing-coverts, and entire mantle pale French-grey; quills white; first primary black, on the outer web black nearly to the tip, where it is crossed by a broad black bar; remaining primaries with a subterminal black bar; secondaries French grey, broadly tipped with white, the outermost ones being pure white; beak yellow, with a broad red patch crossing it, and a black bar near the tip; gape and eyelids vermilion; legs yellow; irides dark brown. Total length 27 inches, culmen 3·4, wing 18·8, tail 7·5, tarsus 2·8.

*Young Male in winter* (El Kab). Differs from the adult in having the head and neck white, marked with oblong dashes of ashy brown; primaries chiefly black, being only white at the base and the tip, the first primary having, however, a small oval spot on the inner web, the second having a similar but very

small white spot; tail white, with a broad subapical black band; beak paler than in the adult, the vertical black band being much larger.

*Nestling* (Volga). Covered with soft, whitish down, which on the back, head, neck, and sides of the body is tinged with dull grey; bill blackish, yellow at the tip.

THIS giant amongst the Black-headed Gulls is an East-European and Asiatic species, only occasionally penetrating into Central or Western Europe. It has, however, on one occasion been met with in Great Britain. Mr. F. W. L. Ross, writing in the 'Annals of Natural History,' 1859, vol. iv. p. 467, states that "one was shot by a boatman, Mr. W. Pine, when employed by W. Taylor, Esq., of Bridgewater, who was engaged in fishing for bass in the river off Exmouth, about the end of May or the beginning of June last; it was in company with a flock of ordinary Gulls. Its remarkable size and appearance attracted the attention of the boatman, who, having his gun with him, singled it out, and fortunately obtained the bird, which has since been kindly presented by the above-mentioned gentleman to the writer." It is now in the Exeter Museum.

The specimens of this Gull, which are now to be had through the dealers, appear all to come from Sarepta, on the Volga, through Mr. H. F. Möschler, of Herrnhut, in Saxony. My friend Mr. Sabanäeff informs me that it inhabits the shores of the Caspian; Bogdanoff observed it on the delta of the Volga; and, according to Arzibascheff and Rickbeil, it breeds on the southern part of the Sarpa, and especially on the borders of the lakes Barbautzak, Khana, and Ozaga-Nour. The only parts of Southern Europe west of Russia from which I find it recorded are, according to Degland and Gerbe, Switzerland and Hungary; and to Greece it is, according to Lindermayer, a rare visitor. Professor von Nordmann writes that it is very common in the Caspian, but rare in the Black Sea. M. Ménétries observed it near Bakou, and on the island of Marghin, in the Caspian. Canon Tristram met with it in Palestine, and has kindly lent me for examination a magnificent specimen obtained by him on the sea of Galilee. Writing in 'The Ibis' for 1868 on the avifauna of Palestine, he says that "the Gulls and Terns were equally abundant with the Grebes in the winter and spring on the sea of Galilee. From morning to night they pass and repass up and down its short length—the magnificent *Larus ichthyaetus* in particular making the circuit of the lake close to the edge, and always within shot, as though to keep himself in exercise. We got this royal Sea-Gull, in the finest possible plumage, in the month of March. Where they go to breed I cannot say; they certainly do not breed in Palestine; probably they take an easy flight to the Red Sea and enjoy their spring among its coral-reefs." It is found in North-eastern Africa; and Captain Shelley writes that it "ranges throughout Egypt and Nubia, and is far from uncommon. In the Fayoom I met with it daily on Birket el Korn, and frequently shot it in full plumage in February, and have also noticed it as high up the Nile as El Kab. It is likewise abundant on the coasts of the Red Sea and Mediterranean." To the eastward it is met with in India, where, according to Dr. Jerdon, it was then rare; and he himself only met with it "on the sea-coast, at Madras, and at the head of the Bay of Bengal, occasionally coming up the mouth of the Hooghly and other large rivers." Mr. A. O. Hume, however, on the other hand, writes to me that "the Great Black-backed Gull is common enough along our Indian coasts, and about all large inland lakes or broads towards the north and west of India, but only during the cold season. I have seen them off Bombay,

Madras, and the Sandheads; and I found them very numerous along the coast of Scinde, and the Mekran coast as far as Gwaaer. I also shot one at Muscat. On the Sambhur Lake, on the Najafgurrh Jheel, and other similar pieces of water in Northern India, I have seen many; but at the Munehur Lake, in Scinde, I actually shot (and they are wary birds) sixteen in three days. They are to be met with in the Indus as high up as Sukker, in the Ganges up to Monglujr, and in the Bhurumpooter, I am told, nearly to Assam, throughout the cold season; but about March and October they are to be shot in all the great rivers of Northern India, the Indus, Chenab, Sutledge, Jumna, Ganges, almost at the foot of the hills, apparently to and from their breeding-haunts. Where these are I have not yet been able to discover. *Not*, I now believe, in Cashmere, possibly the Caspian or Lake Ural, or the swamps of Geistan. Those I shot this year at the Manchur lake were getting into breeding-plumage, but the black head was complete in none; but those shot in the latter half of February on the Mekran coast were all in full breeding-plumage." It has also been recorded by Cassin from Japan, having been obtained at Hakodadi on Commodore Perry's expedition, though not referred to by Temminck and Schlegel in the 'Fauna Japonica.'

Of the breeding-habits of this Gull but very little is known. Pallas, who has been often quoted in what he says on this subject, merely states that it lays its eggs on the bare sand, without any vestige of a nest. Mr. H. F. Möschler's collector in Sarepta writes that they breed in colonies, like the Common Black-headed Gull, and that it is only possible to make sure of obtaining the bird just as she rises from her eggs. The eggs sent by this collector are said to come from near Sarepta; but Mr. Taczanowski informs me that though met with on the delta of the Volga, he scarcely thinks that it breeds there. Arzibascheff, he says, met with it on the lakes of Barbanchak, Hanata, and Laza-nor; and Rickbeil states that it breeds there. Generally, however, it is met with only on the islands along the east coast of the Caspian Sea, where it breeds in company with *Larus leucophæus*. According to Eversmann the young are hatched out in June, and soon leave the nest and run about. Eggs in my collection, received from Mr. Möschler, measure  $2\frac{3}{4}$  by  $2\frac{3}{4}$  inches, and are dull stone-drab in colour, streaked and blotched with light and dark umber-brown.

Pallas describes the call of this Gull as being a hoarse, raven-like croak (*kóu, kóu*), which it utters when on the wing.

The adult bird and nestling figured and described are in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Volga, May (*Möschler*). *b*, *pullus*. Volga (*Möschler*).

*E Mus. Howard Saunders.*

*a*, ♂, *b*, ♀. Volga, May (pair sent with eggs). *c*, *pullus*. Volga, June.

*E Mus. H. B. Tristram.*

*a*, *ad.* Sea of Galilee, February 29th, 1864 (*H. B. T.*).

*E Mus. G. E. Shelley.*

*a*, ♂, *b*, ♀. Fayoom, Egypt, February 27th. *c*, ♀. Fayoom, March 7th. *d*, *juv.* El Kab, Egypt.



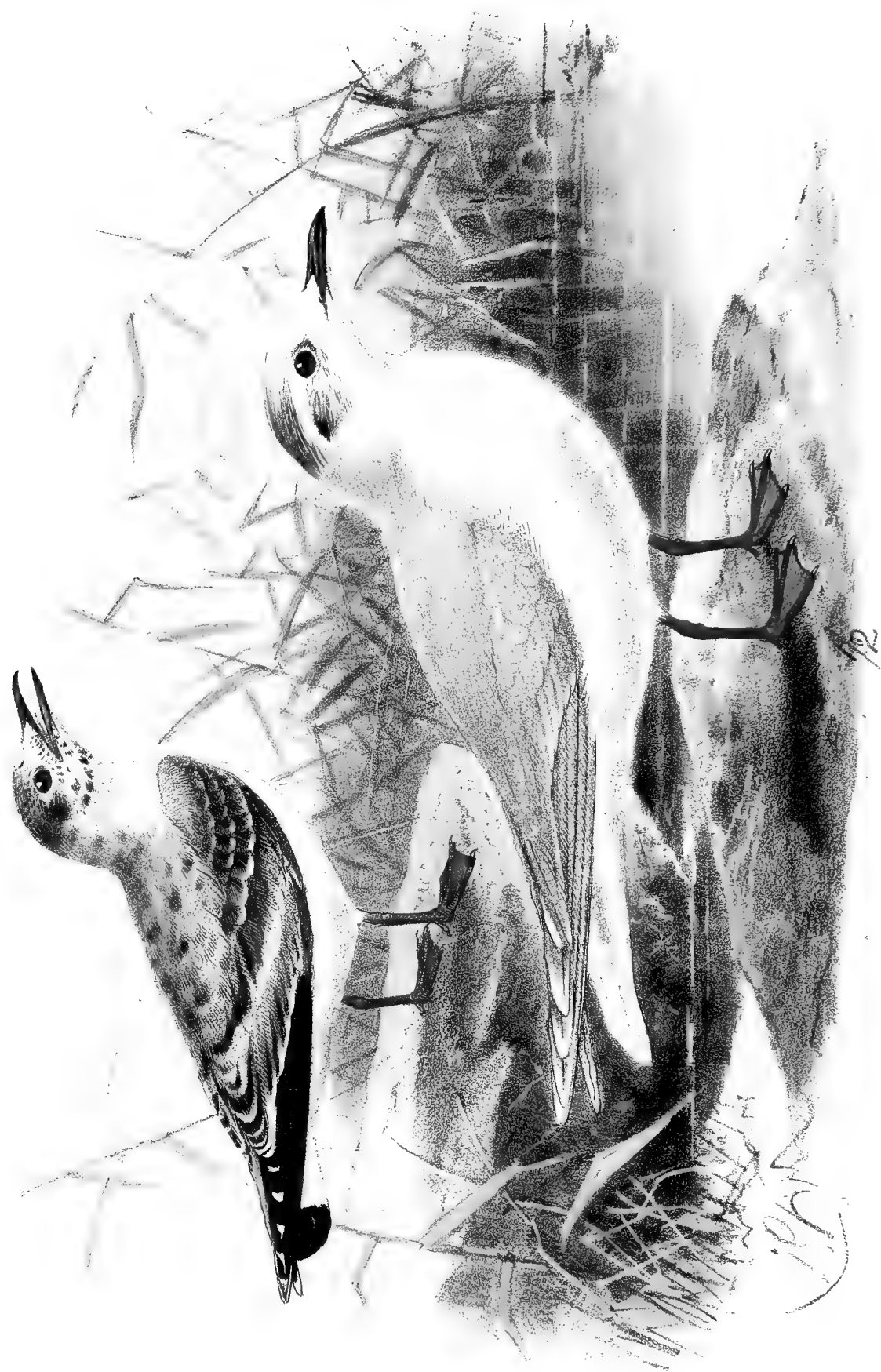




LARUS MINUTUS.  
XXXIII



599 A



LITTLE GULL.  
LARUS MINUTUS.  
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## LARUS MINUTUS.

(LITTLE GULL.)

*Larus minutus*, Pall. Reise Russ. Reichs, iii. p. 702 (1771).*Larus atricilloides*, Falk. Reis. iii. p. 355, t. 24.*Xema minutum*, Boie, Isis, 1822, p. 365.*Larus Dornbignii*, Aud. Hist. Nat. de l'Égypte, p. 271, pl. 9. fig. 3 (1825).*Hydrocolæus minutus*, Kaup, Natürl. Syst. der europ. Thiere, p. 113 (1829).*Larus nigrotis*, Less. Traité d'Orn. p. 619 (1831).*Chroicocephalus minutus*, Eyton, Cat. Brit. B. p. 54 (1836).*Gavia minuta*, Macgill. Hist. Brit. B. v. p. 613 (1852).

*Little Gull*, *Russian Mow*, English; *Mouette pygmée*, French; *Gabbianello*, Italian; *Zwergmöwe*, German; *De Dwerg-meeuw*, Dutch; *Dwærg Maage*, Danish; *Dverg Måse*, Swedish; *Tschaika malaya*, Russian.

*Figuræ notabiles.*

Sav. Descr. de l'Égypte, pl. 9. fig. 3; St.-Hilaire, Exp. Scientif. de Morée, pl. 5; Naum. Vög. Deutschl. pl. 258; Gould, B. of Eur. v. pl. 428; Kjörb. Orn. Danic. tab. xli. figs. 1, 2; Schl. Vog. van Nederl. pls. 355, 356; Yarr. Brit. B. iii. p. 426; Gould, B. of Gt. Brit. pt. xvi.

♂ *æstiv.* suprâ pulchrè et pallidè canus: pileo undique nigro: collo postico cum dorso superiore, uropygio tectricibusque supracaudalibus albis: remigibus suprâ canis, subtus cinerascanti-nigris scapis albis, pennis omnibus conspicuè albo terminatis: caudâ purè albâ: subtus albus roseo indutus: subalaribus cinerascantibus, plumis axillaribus canescenti-albis: rostro nigricanti-rubro: pedibus miniatis.

♀ *æstiv.* mari omninò similis.

♂ *hiem.* similis ptilosi æstivæ, sed pileo albo versus nucham cano, nec nigro: pectore roseo induto.

*av. hornot.* suprâ canus, dorsi plumis quibusdam brunneis: pileo brunneo nigro mixto, fronte albâ: genis et regione auriculari nigricantibus: tectricibus alarum nigricantibus, minimis plerumque canis, majoribus albo et cano marginatis: remigibus suprâ nigricantibus, pogonio interno fere omninò albo, pennis omnibus albo terminatis, primariis interioribus et secundariis exterioribus latiùs: dorso postico nigricante, uropygio et tectricibus supracaudalibus albis, his brunneo paullulùm notatis: caudâ albâ, parte apicali nigrâ, fasciam latam nigram formante: subtus albus, pectoris summi lateribus vix brunnescentibus: subalaribus et plumis axillaribus purè albis: rostro corneo-nigro: pedibus carneis.

*Adult male in summer plumage.* Back beautifully delicate French-grey; head black all over, the throat included; back and sides of the neck, upper part of the back, rump, and upper tail-coverts, as well as the tail itself, pure white; wing-coverts of the same colour as the back; quills delicate grey above like the back, all the feathers tipped with white, the under surface of the wing greyish black; under surface

of the body pure white with a beautiful blush of pink on the breast; under wing-coverts dark grey, axillary plumes greyish white; bill blackish red, gape dark red; legs bright vermilion or coral; iris deep brown. Total length 10·4 inches, culmen 0·9, wing 8·8, tail 3·6, tarsus 0·95.

*Adult female.* Exactly similar in coloration to the adult male, but perhaps a trifle smaller in size.

*Adult male in winter plumage.* Conspicuous by the absence of the black head; the latter is white, excepting a slight indication of grey on the nape; the breast is suffused with pink as in summer; but the feet are yellowish red, and not nearly so brilliant as in the breeding bird.

A young male in the second year had the bill blackish, the legs dirty orange-yellow, the head white, grey on the nape, below that some feathers, as also the long auricular mark, black, back of neck, sides of neck, and back blue-grey, darker than the old bird; below white with a beautiful rose tinge, the five outer quills brownish grey, with inner web white, the inner ones, as also the larger wing-coverts, light blue grey, the lesser coverts, three last secondaries, the middle wing-coverts, and a broad band on the tail, which lessens towards the outside, black; the tips of the white tail black, or blackish brown. Most of the dark feathers were edged with white. As I before stated, this bird has no incubation-spots. (*Meves, in epist.*)

*Young.* Head brown, varied with black and grey, forehead white, cheeks and ear-coverts blackish; back brown, some of the feathers darker and almost black, and some becoming grey; lower part of the back blackish; rump and upper tail-coverts pure white, the latter here and there edged with brown; wing-coverts blackish, those on the carpal joint becoming grey, the median and greater coverts more or less distinctly edged with grey or white; quills blackish, tipped with white, the inner primaries and outermost secondaries more conspicuously, the under surface of the wing white, the greater part of the inner webs of the quills being of this colour; tail white at the base, black towards the tip, forming a broad bar; under surface of the body white, with a few brownish feathers on the upper part of the breast; under wing-coverts white; bill horn-black; feet flesh-coloured. Total length 10 inches, culmen 0·9, wing 8·7, tail 3·8, tarsus 0·9.

*Obs.* The bird just described is in the collection of Mr. J. H. Gurney, jun., and is undoubtedly the youngest we have yet seen. It was shot on the 14th of October, 1868, at Flamborough Head, and is not yet full-grown. The varied plumage of black and grey is similar to that of the young Kittiwake, and a great difference in the colour of the quills from the adult bird is to be noticed. In the fully mature Little Gull the quills are beautiful grey with white tips, while the under surface is greyish black, the under wing-coverts being also dark grey; while in the young bird the upper surface of the wing is black, and the under surface almost entirely white, the under wing-coverts being wholly of the latter colour. As the bird progresses towards maturity the scapulars become grey, and all traces of the pale brown feathers on the head and back disappear. A specimen in Mr. Gurney's collection exhibits this phase of plumage; it was killed at Flamborough Head on the 24th of October, 1867, and is described as having a tinge of salmon-colour on the breast, although so young. The grey colour gradually spreads over the entire back and scapulars, and the black on the lower part of the back begins to disappear, but very little change is perceptible in the wing. We are inclined to believe that the change of colour in the wing is also gradually assumed, and that the black disappears by degrees, the grey colour making its appearance first on the bases of the feathers, and extending bit by bit towards the extremity of the quill. We may mention in conclusion that, although it has been stated to the contrary, the Little Gull, when immature, certainly has the tail perceptibly forked.

THE metropolis of this species is undoubtedly Eastern Europe, whence it wanders into the western portion of the continent, in most of the countries of which it has been known to occur. It extends its range into Siberia, and has once been obtained in India.

Regarding its occurrence in Great Britain, Mr. J. H. Gurney, jun., forwards the accompanying note:—"Prior to the year 1866 the Little Gull was considered a very rare British bird, although before this date Mr. Hancock got several off the coast of Northumberland; but only the first one obtained was recorded: two of his specimens, young birds with slightly forked tails, were in the Great Exhibition of 1851, and attracted much attention. He likewise assured me that Mr. W. E. Brooks once saw several of these Gulls on Holy Island when he was cut off by the tide. In 1866, however, Dr. Boulton received several specimens from the Yorkshire coast; and in October 1868 I obtained no less than ten examples, forwarded to me principally by his agent, a tailor and taxidermist of the name of Bailey, who dealt largely in the plume-trade. Their expanded wings measured from 1 ft.  $2\frac{1}{2}$  in. to 1 ft.  $3\frac{1}{2}$  in., and the average length was 11 inches; the feet reddish brown, brownest in the young birds. One specimen which I sent to Mr. Hancock had in its mouth a fly; the stomach of another, examined by Mr. Cordeaux, contained undigested portions of several small fish, horny portions of fins and tails, vertebræ, and ear-bones. Before the year 1870 the Little Gull had occurred most frequently in the months of October and November. Only three or four specimens have ever been obtained in this country with the heads entirely black. I have a female, which was shot by the before-mentioned Matthew Bailey on the 12th of July 1868, as it was beating up the wind in company with four Kittiwakes off the rock-bound coast of Yorkshire; generally they consort with Terns. When I came to skin it, there were two hatching-spots upon the belly. Another, which might have been its mate, was obtained a few days after at Bridlington by a gentleman of the name of Warmesley: both these birds had black heads."

In Scotland the Little Gull is of very rare occurrence, but has been obtained in East Lothian and Wigtownshire. On the south coast of Great Britain it is an occasional visitant. Mr. Gatcombe, writing from Plymouth, says, "*Larus minutus* is rare on our coasts; but I know of half a dozen instances of its having been killed near Plymouth, all being in immature plumage. One of these, obtained on the 3rd of February 1862, had already to a great extent assumed the black head peculiar to the breeding-season, although the other parts of the plumage showed the bird to be immature."

With respect to its distribution in Scandinavia, Professor Nilsson states that this Gull was formerly found during the summer on Gottland, and bred there in the marshes, as for instance at Muskemyr, near Sundre, on the southern point of the island, but is now quite extinct. It is occasional in Denmark, according to Kjærbølling, and has occurred in Heligoland, as recorded by Gätke. Mayer also includes it among the birds of Livonia.

Naumann states that, as far as Europe is concerned, it is an eastern bird, only occasionally occurring on the coasts of the Baltic and other parts of Germany, at the mouths of the large rivers, and on some of the lakes during the seasons of migration, and often in any thing but small numbers. He states that it occasionally visits the Swiss lakes, and has also been procured on the Neusiedler lake.

In Holland Professor Schlegel says it is occasional on the coasts; and Mr. H. M. Labouchere writes to us:—"The Little Gull is of very rare occurrence in Holland; at intervals, however, small flocks of these birds make their appearance on the sea-coasts, but they seldom remain there for any length of time. A few pairs of these birds have been known to breed in the part of the country known as the 'Hook of Holland.'" De Selys-Longchamps states that it only occurs on the coast of Flanders during the period of migration, and is a very uncertain visitor. Degland and Gerbe write:—"A few individuals have been killed on the banks of the Scheldt, near Tournai, in the salt marshes of the Département du Nord, near Abbeville, Montreuil-sur-Mer, Saint-Omer, Amiens, and also in the south of France. Mr. Hardy has procured it in September, near Dieppe."

No mention has yet been made of the Little Gull in Spain, though it is doubtless an occasional visitor to the eastern coast of the country. In Italy, Count Salvadori informs us it is not particularly common, particularly in summer dress. Mr. Howard Saunders believes that it is not uncommon on the Tiber in spring; and Dr. Giglioli says that he saw a few scattered individuals of the present species in the neighbourhood of Leghorn Harbour in May. Malherbe has published the following note on the Little Gull in Sicily:—"This Gull is common in the south, on the shores of Sicily. It appears on the coasts in September, and goes then to the lakes in the interior. It is often killed near Lentini. In April it reappears on the coast, and leaves us in May. Its fearlessness borders on stupidity." Mr. Saunders states that the Museum of Palermo contains many fine specimens of the present species, while he himself saw a great quantity of Little Gulls in the Bay of Catania. Mr. C. A. Wright states that in Malta "in some years this species is pretty plentiful in our harbours in winter, and it not unfrequently arrives in September. Its great tameness and fearlessness of danger are a remarkable feature in this bird. I have shot as many as nine or ten in the course of a few hours, and might have shot more. It may easily be recognized on the wing by its small size, peculiar light, butterfly manner of flight, and dark under wing-coverts. I have never seen it here in the breeding-plumage. Besides the general name of *Gauja*, or Gull, the Maltese call it *Cirlena*, or Tern, from its somewhat similar mode of flight." Loche says it is by no means common in Algeria, only occurring in winter, and then but rarely and accidentally. Canon Tristram, however, writes to us as follows:—" *Larus minutus* abounds in winter on all the shallow lagoons of the North-African coast, especially between Tunis and Carthage, where it is extremely tame, flying and dipping after small fish like a Tern. Nearer home I generally hear of a specimen or two every winter shot in my own parish at Tees-mouth." Quite recently Captain Shelley has obtained a specimen in full winter plumage at Alexandria; it had not been recorded from this locality since Savigny's time. By the last-named author it was figured in the celebrated 'Description de l'Egypte,' and received the name of *Larus dorbignii* from Victor Audouin.

Lindermayer's notes are as follows:—

"I have only observed this Gull during the summer, whereas Von der Mühle states that he only met with it in winter in immature plumage. Both our observations agree if we take the different localities into consideration. Whether it breeds with us, and if so, in what part of the country, I have not been able to ascertain." Lord Lilford, in his paper on birds observed in the Ionian Islands, says that this species was "tolerably common in winter, particularly in the yacht-

harbour of Mandrachio, at Corfu. This species arrives about the end of October, and leaves the country about the beginning of March."

Messrs. Elwes and Buckley, writing on the Birds of Turkey, observe:—

"Very numerous in Greece and Macedonia, in February, and in Bulgaria in April (Ibis, 1859, pp. 362, 363). The Little Gull frequents marshes and lakes, hawking in the manner of a Swallow for insects, which constitute its chief food. We could not make out where they went to at night, as they all disappeared about sunset, probably going off to the coast to roost. An instance of the breeding of this species at Kustendji has been recorded by Dr. Cullen (Ibis, 1867, p. 248)." Mr. George Cavendish Taylor tells us that he has seen the present species abundant near Constantinople, notably so in the Golden Horn.

Professor von Nordmann says "the shores of the salt lakes in the south of Russia are alive with entire colonies of these birds, which nest there." A full account of the breeding of the Little Gull in the north of Russia is given below, while its furthest range to the eastward in Siberia seems to be recorded by Middendorff. He says that he shot it on the Lena, on the 22nd of May, south of Jakúts'k. He also found it not rare on the Stanoroi mountains and on the southern shores of the sea of Ochotsk. Once has it been procured in India by Major Irby, who thus records the circumstance in his paper on the birds of Oudh and Kumaon:—"I killed a specimen of this Gull, in its winter dress, in January 1859, near Jehangirabad; it was exceedingly tame, allowing me to approach within two or three yards."

Mr. W. H. Hudleston has given the following interesting account of the Little Gull in his 'Fortnight in the Dobrudscha':—

"The first object that greeted my arrival in port was a flock of Little Gulls (*L. minutus*) flying about in the harbour. This I considered a good omen, and even indulged in hopes of finding their breeding-quarters, as many were already in good plumage. This species was subsequently noticed in immense numbers between the 20th and 24th, especially on the first of the above dates. At that time the bulk of the flocks were frequenting a lake of fresh water called 'Sud Geul,' which extends for several miles in a northerly direction, parallel to the sea, from which it is separated by a narrow isthmus. On this occasion the flocks of *L. minutus*, associated with a few individuals of *Sterna cantiaca*, were literally swarming in the air a few feet above the surface of the water, like Swallows over a river on a summer's evening. Far as the eye could reach, looking northwards down the lake, these elegant little birds were to be seen on the feed, dashing to and fro most actively. In most of them the head and upper part of the neck were of a brilliant jet-black, producing a singular effect in the mass when contrasted with the white of the rest of the plumage. Upon those which were nearest a faint rosy tinge, confined to the upper part of the breast, was also noticeable. This, I think, is more marked in the living bird than in preserved specimens. In the distance they looked like mosquitoes over the water, the flocks probably extending to the furthest end of the lake, which cannot be less than eight or ten miles off. Here, then, it seemed, was the home of the birds, for which the late John Wolley and myself, misled by a false description, had vainly sought in Öland during the spring of 1856. The isthmus between the lake and the sea, uneven with swampy hollows and dry hillocks that support a coarse and scanty vegetation, might surely be their appropriate breeding-places, where, in company with Terns, Pratincoles, Stilts, *et hoc genus omne*, they might be expected towards

the end of May to deposit their eggs. Never was there a greater mistake. A few days later and the thousands have become hundreds; yet a few days more and these will have dwindled down to tens; so that by the middle of May it is possible that not a pair will remain behind. Doubtless they continue their northward journey along this coast of the Black Sea; but it is in the marshes and lakes of Central Russia, in the great plains of the Volga, and possibly also in those of the Bug, the Dnieper, and the Don, that oologists must look for eggs of *Larus minutus*."

Professor Liljeborg (Naumannia, 1852, p. 110) has published the accompanying notes on the present species in Northern Russia:—

"Very common at Novaja Ladoga on the 7th of June, breeding on small floating islands in a morass. There is a visible difference in the size of the sexes, the male being larger and more rosy-coloured on the breast. The eggs, generally three, were only surrounded with a few dry straws. They much resemble those of *Larus ridibundus*, but are smaller, and vary in size, colour, and shape. Several hundreds of these Gulls were in the vicinity of the above-named island, and tried, when I approached it, to coax me away by flying off all at once on a signal, a querulous cry from one of the flock. As they perceived that this had no effect, they soon returned and were very bold. It is curious that most of those which we found near the breeding-places were males; at another place, at some distance, only females were observed. In their stomachs I found insects (*Neuroptera*). These they often caught in the air, making graceful and quick evolutions, in which they almost surpass the Goatsuckers. In their habits they most resemble the Black-headed Gull. Later I saw them near Archangel, where only a few were observed. This is probably their northern limit. The Russians call them '*Scheik*,' a general appellation used by them for all Gulls."

We are indebted to our friend Mr. W. Meves for the following most interesting account of the Little Gull, which he has forwarded expressly for the present work:—

"On my journey on the canal between Schlüsselburg and Novaja Ladoga I heard, on the morning of the 31st of May, at three o'clock, at a place about sixty versts from Schlüsselburg, a loud cry from small Gulls which frequented the neighbouring swamps. I wished to land immediately, but ascertained that these '*Scheiks*' were much more numerous about twenty versts further on. I left the vessel at the village of Dubno, and soon visited the breeding-places. It was not without difficulty that these were reached, as they were in large marshy lakes with muddy bottoms, and on almost floating islands formed of plants. If one stepped on one of these islands the soft ground gave way, and it was difficult to prevent sinking through.

"The nests were placed both on the edge as also on the centre of the islands, amongst the low plants, often quite close to each other, and were constructed some of a few, some of many flag-leaves, scirpus, and grass-straws, some carefully, some carelessly built, and measured generally from 15 to 20 cub. centims. in diameter. The usual number of eggs were three or four; and only one nest contained five, of which one was considerably less than the others. In many nests, however, there were only one or two eggs, as the laying-time was not over. The eggs vary considerably, both in colour and form. I observed that *Sterna hirundo* nested amongst the Gulls, and made its nest similarly, its eggs also resembling those of the Gulls, and was therefore much afraid at first that I might not be able to distinguish them from each other; but I fortunately observed, on blowing an egg that I took out of a Gull that I shot on the first day, that the yelk was of a rich

orange-red colour, whereas that of the eggs of *Sterna hirundo* was ochre-yellow. This difference I found, on blowing a large series of eggs, to be constant. Later on I also observed that *Sterna hirundo* had also separate breeding-places, as, for instance, small islands alongside of larger ones, or else they took possession of a portion of an island, and the Little Gulls drove them out of their ground uttering loud cries.

The usual form of the eggs is elongated or short ovate, others were oval, some of the same shape as Grebe's eggs, and others again almost pear-shaped. The ground-colour was greenish, greyish green, olive-grey, leather-brown, and greyish brown; but I never found them with the ground-colour greyish white, as are the eggs of *Sterna hirundo*.

"The pale underlying shell-markings were blackish, the large and more distinct spots, which often ran into each other and formed a sort of wreath round the larger end of the egg, were, as were also the spots and dots scattered over the egg, black or liver-brown. On some the markings formed zigzag lines or twisted scratches. Some sittings contained eggs of very different form and markings.

"I can confirm Professor Liljeborg's statement that the flocks of *Larus minutus* which surround the nest-plunderer sometimes fly far away on a given signal, and in a short time return and again try to get the intruder to leave. On the other hand I do not consider it probable that the last year's young, which can easily be distinguished by the black band on the tail and the light-coloured head, were breeding; for, first, they flew about the nests exhibiting but little anxiety compared with the old birds; secondly, they were moulting their small feathers; and, thirdly, a male which I shot (for I obtained no female) had no *incubation-mark*. It is true that the testes were rather large; but neither this nor the swollen ovary observed by Liljeborg in the female gives any sure proof that they were capable of breeding. My idea is that they had only come to join the breeding-birds for the sake of company.

"I found in the stomachs of many of the Little Gulls I examined not only insects but chiefly small fishes, which they are continually catching in the lake. Very few had insects in their stomachs; but it is probable that later, when the *Neuroptera*, *Phryganiæ*, and *Ephemera* are more abundant, they feed on these in preference, as is the case with the Black-headed Gull (*Larus ridibundus*).

"The flight of the Little Gull is peculiarly graceful and easy, and the slaty black under-side of the wing gives them a characteristic appearance, so that they are easily recognizable.

"The fresh-killed male is a most lovely bird. The bill is brownish red, gape and legs bright red, the iris dark chestnut-brown, the head velvety black, &c. &c.

"The female differs from the male in having the bill rather lighter-coloured, and the under surface of the wings much lighter, and greyish black. The rose-tinge is quite as deep as in the male—indeed, often deeper. The female is rather less in size than the male. Both the old males and females had three incubation-spots—one in the middle of the abdomen, the others on the sides.

"On the 8th of June I left the breeding-places and hoped to find the young in down at another place, but unfortunately this did not prove to be the case. I could not visit the breeding-place near the fortress of Archangel, which is frequented by a few pairs; but I saw the skins of a couple which Mr. Iversen, of St. Petersburg, had procured there. On my return journey I again

visited the breeding-places on the Ladoga, on the 22nd of August, hoping at least to find some young birds there; but not a single Little Gull was visible. According to the peasants they had all left about a fortnight previously. Several *Common Terns*, however, had remained behind."

We have before us a dozen of the eggs of this Gull, collected by Mr. Meves on the Ladoga, now in Dresser's collection. These eggs measure from  $1\frac{2}{40}$  inch by  $1\frac{7}{40}$  inch to  $1\frac{2}{40}$  by  $1\frac{8}{40}$ , and most resemble some varieties of those of the Arctic Tern. The ground-colour is greenish olive, lighter in some and darker in others; and the markings, which are dark brown, are generally distributed over the egg, in some, however, collected round the larger end so as to form an irregular zone.

In the first Plate we have figured two birds in our own collection, representing an adult male in full breeding-dress and an immature bird. The former example was obtained at Novaja Ladoga, by Mr. Meves during his recent expedition into North Russia; while the young bird was given to us by Mr. H. J. Elwes, who procured it at Orcos, in Eubœa, on the 8th of February 1869. In the second Plate are figured an adult bird in winter dress and a very young specimen; for the loan of these we are indebted to our kind friend Mr. J. H. Gurney, jun. We take the present opportunity of returning our best thanks to this gentleman for lending us a magnificent series of specimens of this species.

In the preparation of the above article we have examined the following specimens:—

*E Mus. Sharpe and Dresser.*

- a, b, c.* 2 ♂, 1 ♀. Novaja Ladoga, May 31st, June 3rd and 6th, 1869 (*Meves*). *d.* Russia (*Moeschler*).  
*e.* ♂ *juv.* Orcos, Eubœa, February 8th, 1869 (*H. J. Elwes*).

*E Mus. J. H. Gurney, jun.*

- a.* (♀ in breeding plumage). Flamborough Head, July 12th, 1868 (*M. Bailey*). *b.* (♀ in winter plumage). Near Bridlington, October 24th 1868 (*Jones*). *c, d, e.* Flamborough Head (*M. Bailey*). *f, g.* Bridlington (*Jones*). *h.* Filey (*D. Brown*).

*E Mus. Howard Saunders.*

- a.* Leadenhall Market (*Burton*).

*E Mus. G. E. Shelley.*

- a.* ♀. Alexandria, February 28th, 1871 (*G. E. S.*).

*E Mus. Lord Lilford.*

- a.* ♂. River Volga, April (*Moeschler*). *b.* ♂. Lower Volga, April 1867 (*Moeschler*). *c, d.* ♂, ♀. Leadenhall Market, February 1870 (*Burton*). *e.* Bay of Butrinto, Epirus, January 5th, 1857 (*L.*).

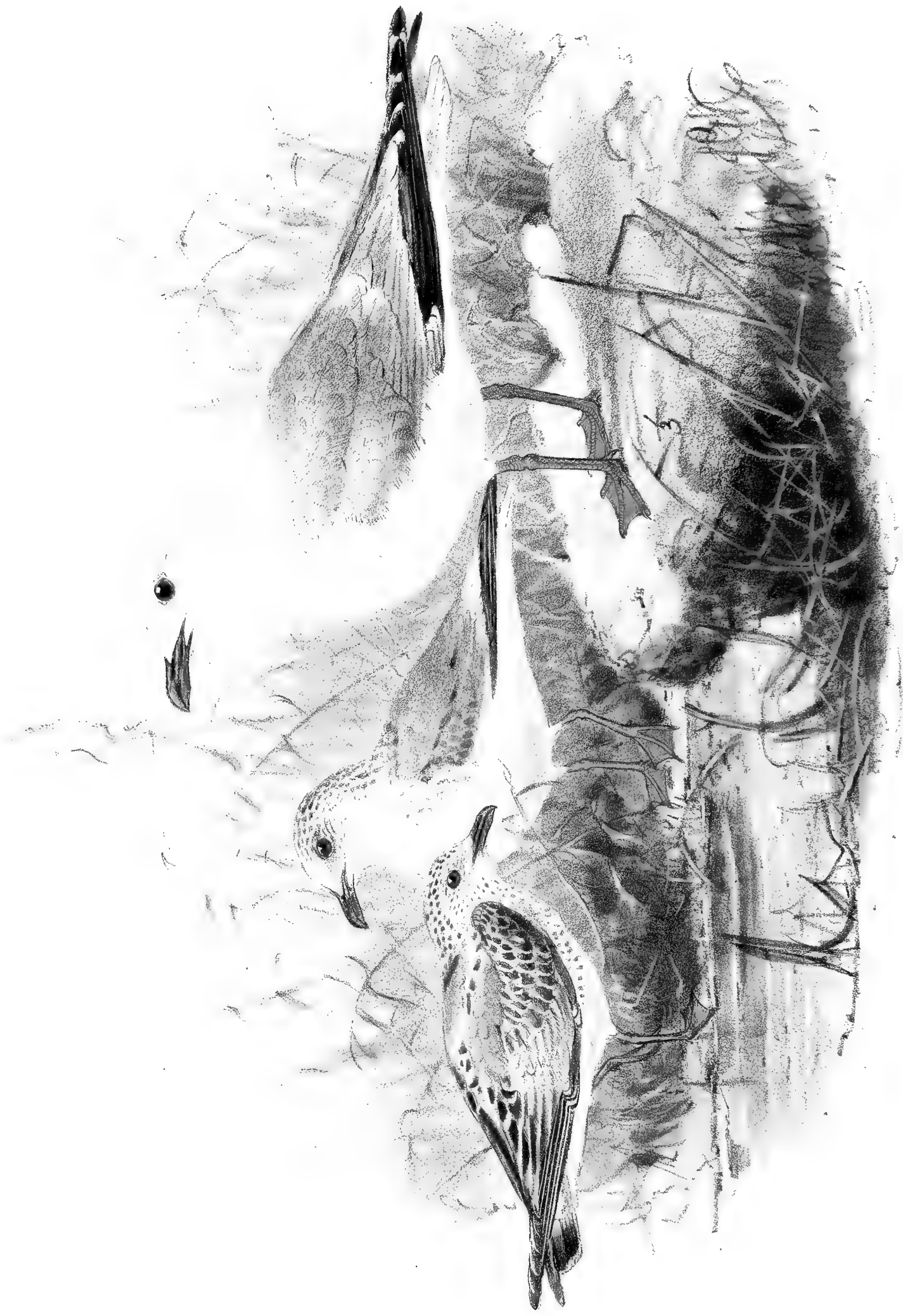
*E Mus. Salvin and Godman.*

- a, b.* ♂, ♀. Novaja Ladoga, May 31st and June 2nd, 1869 (*Meves*).

*E Mus. H. B. Tristram.*

- a.* ♂. Novaja Ladoga, May 31st, 1871 (*Meves*). *b.* ♂. Tunis, January 14th, 1868 (*H. B. T.*). *c.* Bridlington (*Jones*).





COMMON GULL  
LARUS CANUS.  
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## LARUS CANUS.

(COMMON GULL.)

*Gavia hyberna*, Briss. Orn. p. 189 (1760).*Larus canus*, Linn. Syst. Nat. i. p. 224 (1766).*Larus cinereus*, Scop. Ann. Hist. Nat. i. p. 80 (1768).*Grande Mouette cendrée*, Buff. Hist. Nat. ix. p. 282 (1784).*Larus hybernus*, Gm., Linn. Syst. Nat. i. p. 596 (1788).*Larus procellosus*, Bechst. Orn. Taschenb. p. 373 (1802).*Larus cyanorhynchus*, Mey. et Wolf, Taschenb. ii. p. 480 (1810).*Larus niveus*, Pall. Zoogr. Rosso-Asiat. ii. p. 320 (1811).*Larus canus*, var. *major*, Middend. Sib. Reise, ii. p. 243 (1853).*Larus heinei*, Von Homeyer, Naumannia, p. 129 (1853).*Larus kamtschatkensis*, Bp. Rev. et Mag. de Zool. 2nd ser. vii. p. 16 (1855).*Rissa nivea*, Bp. Cat. Parzud. p. 11 (1855).

*Common Gull*, *Sea-Maw*, *Mew*, or *Mall*, English; *Goéland cendré*, French; *Sturmmöwe*, German; *Gabbiano*, *Gavina*, Italian; *kleine Zeemeeuw*, Dutch; *Storm-maage*, *Graanakke*, Danish; *Graamaage*, Norwegian; *Fiskmåse*, Swedish; *Klusha*, *Baklusha*, Russian.

*Figuræ notabiles.*

Werner, Atlas, *Palmipedes*, pl. 14; Buff. Pl. Enl. ix. pl. 84 (*heinei*); Briss. Orn. pl. xvi. fig. 2; Gould, B. of Eur. pl. 437; Naumann, Vög. Deutschl. pl. 261; Cab. Journ. 1855, pl. 4. fig. 7.

♂ *ad. ptil. æst.* capite, collo, supracaudalibus caudâque et corpore toto subtus niveis, immaculatis; stragulo pallidè cærulescenti-cano: remigibus ad basin cinereis, duobus externis maculâ magnâ subapicali albâ, tertio maculâ minutâ albâ: cæteris cærulescenti-cinereis, ante apicem nigro transfasciatis: secundariorum apicibus latè albis: rostro virescenti-luteo: iride griseo-fuscâ: pedibus viridi-flavis.

*Ptil. hiem.* ptil. æst. similis, sed striis longitudinalibus fuscis in vertice et nuchâ diversa.

♀ *mari* similis.

♂ *juv.* capite griseo-albo, griseo-fusco striato: dorso, scapularibus tectricibusque alarum pallidè griseo-fuscis, pennis omnibus griseo albo marginatis: remigibus nigricantibus, primariis immaculatis, secundariis vix albido marginatis et in pogonio interno griseo-canis: rectricibus albis, fasciâ ante apicem late nigro-fuscâ, apicibus vix albo terminatis: subtus albus, pallidè griseo-fusco punctatus et adumbratus: rostro lutescente, ad apicem nigro: pedibus lutescentibus: iride brunneâ.

*Adult Male in summer* (Leckö, Sweden, 27th of May). Head, neck, tail, tail-coverts, and entire underparts pure white; back, scapulars, and wing-coverts, forming the mantle, delicate light French-grey; first

primary black, with a broad white bar close to the tip, the second with a smaller white bar, and the third with merely a white spot near the tip; inner primaries French-grey, with a large, irregular, inverted-V-shaped bar across the tip, and finally tipped with white, the black becoming less towards the secondaries, which are pale French grey at the base and white towards the tip; beak greenish yellow; legs greenish grey; iris greyish; edge of the eyelid vermilion. Total length 17 inches, culmen 1.8, wing 14, tail 5.5, tarsus 1.85.

*Female.* Similar to the male.

*Adult Male in the winter.* Differs merely in having the head and nape striated with dull brown.

*Young Male* (Hempstead, January 1866). Head and neck dirty white, striped with brown; back, scapulars, and wing-coverts dull light brown, broadly margined with dull greyish white, here and there a few blue-grey feathers of the mature dress showing themselves; rump and upper tail-coverts dirty white, marked with brown; tail white, the terminal half being blackish brown, narrowly tipped with white; primaries blackish brown; secondaries grey on the inner web from the base, narrowing off towards the tip, and narrowly tipped with dull white, the inner secondaries dull grey, marked with dirty brown, and broadly tipped with white; underparts dirty white, spotted and marked with dull light brown; beak dirty yellow at the base, black at the tip; iris brown.

*Young in down* (Orkneys). Covered all over with soft yellowish grey down, whiter in tint on the face, throat, and abdomen; forehead blackish brown; entire upper parts spotted here and there with large blackish spots, one or two spots being also on the throat, underparts generally unspotted, except that on the flanks there are some irregular black marks. It may be distinguished from the young of other Gulls by a large black spot which touches the base of the upper mandible, and which is never absent, though often varying considerably in size.

IN Great Britain this Gull is more common during the winter than in the summer season; but it is said to breed in the south of England. Mr. A. G. More writes that it "breeds in Cornwall (*Mr. E. H. Rodd*), in North Devon (*Rev. M. A. Mathew*), and in Somerset (*Mr. W. D. Crotch*), in Pembrokeshire (*Mr. J. Tracy*), and in Cumberland (*Mr. T. Gough*). On the east coast of England the Rev. J. C. Atkinson assures me that the Common Gull breeds in the Essex marshes, where it is rare. It is believed to nest on the cliffs of Yorkshire; but it appears to be a scarce bird in most of the English localities, and seems to be wanting also in several of the Scottish districts." Dr. R. O. Cunningham found it breeding on the Bass; and with regard to its range in Scotland, Mr. J. A. Harvie Brown writes to us that "the Common Gull's distribution in Scotland may be described as western and northern. It extends to the Outer Hebrides, where an immense colony occupies a large green island in one of the innumerable freshwater lochs of North Uist. In Sutherland it is a very abundant species, breeding in large and small colonies, often in company with *Larus fuscus*, there and elsewhere in the west of Scotland, frequenting lochs at a considerable elevation above the sea. On Loch-na-Nean (Loch of the Birds), on the confines of Perth, Aberdeen, and Forfar, it is also found breeding at a considerable elevation. This loch contains fine large yellow trout, and is said to be one of the highest lochs in Scotland that contains fish." Mr. Robert Gray also, writing on the birds of the west of Scotland, states that "its breeding-places are similar to those selected by the Lesser Black-backed Gull; they are found

alike on the grassy summits of precipitous rocks in or near the sea, and on moorland lochs at some distance inland, sometimes even on the highest mountain-ranges. Mr. Sinclair has seen a large colony on Ben Eadden, about 1800 feet above the level of the sea; and its nurseries are often found on desolate moors, especially in the central islands of the Outer Hebrides, where there are no suitable cliffs to occupy. The islets of the Sound of Harris are also frequented during the breeding-season by this bird; and on Islay and Mull it often resorts to islets in freshwater lakes for breeding-purposes. The same remark applies to the species in many parts of Sutherlandshire and Argyleshire. In some of the midland counties this species is frequently observed in great numbers crossing the country from east to west, and often flying at a considerable height in the air; but they have never, so far as I am aware, been seen going in a contrary direction. Occasionally large flocks travel inland in stormy weather and alight in ploughed fields, where they appear to content themselves for a time with what they can pick up in the way of subsistence. I have seen many hundreds at a time resting themselves during a snow-storm, and dozing on one leg for nearly a whole day, huddled together in a mass, and looking very subdued. On being put to flight on such occasions, they would merely flap lazily in circles above the intruder, and return to their roosting-quarters, drawing closely together as before where the snow had been trampled down on their first assemblage. In the beginning of November 1868, I observed about 150 of these Gulls late in the afternoon rising from the land and flying seawards across the links of Dunbar. These birds were quite near enough to be recognized; and I distinctly saw that the feet of some of them were covered with clay, which had adhered to them when on the ploughed fields, and apparently baffled all their efforts to remove it. As they flew over my head I could see them vainly trying to shake the dust off their feet; and as they directed their flight seawards, I could not help thinking they might visit some earth-covered rock, and there leave any grain or seeds which might happen to be in the clay, to take root and grow for the future edification or wonderment of some wandering botanist."

Throughout Scandinavia it is common up to the far north. Mr. Collett writes that it is a common resident all along the Norwegian coast, and large numbers breed between Stavanger and the North Cape. Eastward of Lindesnæs the colonies become smaller; but a few pairs breed far in the southern fiords. In the spring and summer both old and young birds go up the rivers to the freshwater lakes; and some breed there. They even visit the fell-lakes on the Dovre, Valdres, and in Thelemarken, generally in flocks; and they have been found breeding on the Filefjeld and at Bygdin (*Printz*). According to Wille a vast number were observed in the spring of 1787 on the Sillejords lake, in Thelemarken. It is met with throughout Sweden, and breeds in most localities along the line of coast. Dr. Ludwig Holtz obtained eggs on Gottland; and Mr. Meves found it breeding on Öland, where it is common, both on the seashore and in the marshes. To the northward its Scandinavian breeding-quarters extend to the North Cape; and Pastor Sommerfeldt writes that at the Varanger Fiord it "is commonest during the winter season, but breeds there, nesting on small islands both close to the sea and also far up in the freshwater lakes." In Finland it is one of the commonest species; and Dresser met with it breeding numerously on the fringe of small islands that skirt the coast,—commoner, however, in the northern than in the southern portion of the country. In Russia, Mr. Sabanäeff informs us, it "is a common species, and breeds in almost the whole of Central and Northern Russia. In the

Governments of Jaroslaf, Tver, and Perm he met with numerous colonies of this Gull. Eversmann states that it is very common on the Volga and Ural, and is also found on the lakes in the Kirghis steppes." According to Mr. Sabanäeff's experience it breeds on the mossy fens, and deposits *four* eggs. According to Meyer it is common on all the Livonian inland lakes, as, for instance, the Peipus and Burtnek lakes. It is numerous on the coasts of Prussia; and Borggreve states that it is the commonest Gull on the German coasts of the Baltic, breeding in small colonies on the little islands. During the time of migration it is common on the North Sea, but does not remain over the winter. In Denmark it is, we are informed by Mr. Benzon, a very common species, and breeds on the shores of most of the small islands in the Cattegat and the Baltic, but is rarer on the west coasts. In the autumn and winter it is to be met with seeking after food on the meadows and near the fresh water. According to Professor Kjærbølling it breeds on Hesselö, Hjortholm, Veirö, on the islands in the Isefjord, Læsö, Rödsand, Hirtsholmen, Muusholm, Agersö, and Egholm. It is met with along the coast of the North Sea; and Baron von Droste Hülshoff states that it is found on the coast of East Friesland and the islands throughout the year, but does not breed there, at least not on Rottum and Borkum. In May and June he observed numbers in scarcely full plumage in company with other Gulls, but in July and August they became less numerous. Many are found there during the winter. Baron de Selys-Longchamps writes that it is very common in winter on the Belgian coast and on the Escaut as far as Antwerp. On the Meuse and in the interior of Belgium it only occurs after tempests. M. Hollandre records one instance of its occurrence on the Moselle in winter. During the autumn and winter it is very common on the shores of France. It is the most common species at these seasons on the coast of Dunquerque during a northerly or north-easterly gale, and especially so before a tempest. It breeds, Degland and Gerbe state, on the coasts and in the rocks near Cherbourg, and occasionally near Boulogne. Jaubert and Barthélemy-Lapommeraye state that it arrives in the south of France in September, and leaves again in February; and Mr. Howard Saunders records it from Spain as "a winter visitant, and by no means a numerous one;" but Major Irby found it common in the straits of Gibraltar in winter. Professor Barboza du Bocage includes it in his list of the birds of Portugal, with a query. Passing eastward, again, we find it occurring along the coasts of the Mediterranean. Salvadori met with it on the east coast of Corsica and Sardinia, where they follow the ships in large numbers to pick up the refuse cast overboard. It is true that they are only seen in the Gulf of Cagliari in severe weather; but it is difficult to say why. Mr. C. A. Wright records it from Malta, and further states that Schembri says it is common there in the autumn and winter. Lord Lilford writes that it is "not uncommon in winter in Corfu and Epirus. I saw one of this species pursue, capture, and devour a Redshank at Petalà, in February 1858;" and in Greece it is, according to Lindermayer, tolerably numerous from the autumn to the spring, and numbers frequent the populous harbours. Messrs. Elwes and Buckley, though they did not procure any specimens, write that they have little doubt that they saw it both on the Black Sea and the Gulf of Volo. Professor von Nordmann states that it "is found all along the coast of the Euxine, where it remains through the winter;" and Ménétries records it as the commonest Gull on the Caspian. It occurs on the coast of Asia Minor; and we have a specimen shot near Smyrna, and sent to us by Dr. Krüper, labelled *Larus heinei*, which we consider to be true *Larus canus*.

It has been found in Egypt, but is rare in that country; and Captain Shelley when collecting there only procured one single specimen, at Damietta, on the 27th of February. On the Algerian coast, however, it is common, and is, according to Canon Tristram, in the winter season "most abundant in the harbours during windy or stormy weather;" and this is confirmed by Mr. Taczanowski, who records it as "common on the shores" of Algeria, and "saw several flocks on Lake Fezzara." From the Canaries and Madeira it has not been recorded.

To the eastward it is met with throughout Siberia and southward into China. We cannot look on the larger race as a distinct species, as it merely differs in size, and, as above stated, the measurements of individuals from the same locality differ considerably. Whether *Larus brachyrhynchus* from Western America is the same as the Siberian bird we are unable to say, not having examined a sufficient series of specimens, but think it not at all improbable. Middendorff met with the large race on the western slope of the Stanowoj mountains on the 26th of April, and found it common up almost to the top of the mountains, and especially numerous on the Sea of Ochotsk. He remarks that in the Petersburg Museum there is a specimen of the small race from Kamschatka. Dr. Radde states that this Gull breeds abundantly in June on the islands of the lower Angara. Almost all the examples he procured there belonged to the large race referred to by Middendorff. On Lake Baikal and at Tarei-nor it was common, but rarer in the Central Amoor. They arrived at Tarei-nor on the 28th of March; and Dr. von Schrenck found it not uncommon on the Lower Amoor, where he procured both the large or Siberian race and also the smaller European bird, as will be seen by the measurements of his specimens, which he gives in detail. Mr. Swinhoe met with it in Northern China, and has sent home numerous specimens from Amoy, the bird found there being the larger race found by Von Middendorff on the Stanowoj mountains.

In regard to this large race of the present bird, as also other closely allied species, we may make the following remarks. The large race, which is the *Larus niveus* of Pallas and the *Larus heinei* of Von Homeyer, differs merely from the ordinary race of *Larus canus* by being somewhat larger in size, and, if any thing, having the mantle a trifle darker in shade; but this latter character does not appear to be at all constant. We have carefully compared specimens from Amoy with others from the Orkneys, and find no differences whatever other than those above mentioned. As regards the importance of size only, irrespective of any other specific character, we give below a table of measurements to show how greatly they vary, even in examples of the same age and sex from the same locality. We have therefore considered it inexpedient to separate *Larus niveus* as a distinct species, but look on it merely as an occasional larger race of the Common Gull. In this view we are supported by Professor Schlegel, who, having compared specimens from Amoy, the Volga, and Smyrna, supposed to be a distinct species, pronounces them to belong merely to a somewhat larger race of *Larus canus*, merely differing somewhat in size.

In America the present species is replaced by two very closely allied species—*Larus delawarensis*, Ord (*L. zonorhynchus*, Rich.), and *Larus brachyrhynchus*, Sw., the young of which was described by Lawrence under the name of *Larus suckleyi*, specimens of which, thanks to the liberality of our friend Mr. Howard Saunders, we have been enabled to examine and compare with our own series of skins of *Larus canus*. The former of these (*L. delawarensis*) is stated by

Dr. Coues to be abundant in North America, and generally distributed. Compared with *Larus canus* we find no difference in colours, or arrangement of colour, in the dried skin; but when fresh-killed it is said to have the feet olivaceous, obscured with dusky or bluish, the webs bright chrome, and it has on the bill a broad dusky bar.

*Larus brachyrhynchus*, which inhabits Arctic and western North America, along the Pacific coast and in the interior, differs from *Larus delawarensis* in having the mantle rather darker in colour; and it approaches very close to our large race of *Larus canus* (*Larus niveus*). We regret that we are unable to examine a series of this and the other American species, so as to speak with some degree of certainty as to their distinctness from the European species. It has the feet bluish green and the webs yellow. In order to show the difference in measurements between various examples of *Larus canus*, from different localities, and the two American species above referred to, we give the following Table, and may add that we measure the culmen from the base of the bill, and the height of the bill at the gonys:—

Species.	Sex.	Locality.	Culmen.	Height of bill.	Wing.	Tail.	Tarsus.	Middle toe.
			inches.	inch.	inches.	inches.	inches.	inch.
<i>Larus canus</i>	♂ ad.	Leckö, Sweden.	2·10	0·45	13·9	5·60	1·85	1·60
„	♂ juv.	Öland, Sweden.	2·0	0·45	14·20	5·50	2·0	1·82
„	juv.	Pagham, Sussex.	2·10	0·40	13·80	5·40	2·10	1·70
„	not quite ad.	do.	1·90	0·40	14·30	5·60	1·80	1·60
„	♂ ad.	Leadenhall Market.	1·90	0·45	14·40	5·50	2·0	1·80
„	♀ ad.	Central Russia.	1·85	0·45	14·20	5·60	2·0	1·75
„	♂ ad.	Asia Minor.	2·0	0·48	def.	5·60	2·15	1·75
„	♂ juv.	Hempstead.	1·90	0·45	14·20	5·40	2·10	1·70
„	♂ ad.	Orkneys.	1·90	0·45	13·80	5·75	2·0	1·65
„	♀ ad.	do.	1·75	0·38	13·0	4·90	1·75	1·50
„	♂ jun.	do.	1·80	0·43	13·5	5·65	2·0	1·60
„	juv.	do.	1·95	0·40	14·25	5·50	2·0	1·60
„	ad.	Amoy.	2·15	0·45	14·75	5·75	2·0	1·80
<i>L. delawarensis</i>	juv.	Labrador.	1·90	0·45	13·75	5·75	2·0	1·65
<i>L. brachyrhynchus</i>	ad.	San Mateo, California.	1·90	0·40	13·75	5·50	1·75	1·70
„	juv.	do.	1·85	0·38	13·25	5·0	1·75	1·65

In its habits the Common Gull differs but little from its congeners which occur along our coasts. As before stated, it is with us much commoner during the winter than in the summer season. Macgillivray, writing on the habits of the present species, says that, “the fields having been cleared of their produce, and partially ploughed, to prepare them for another crop, the ‘Sea-Maws,’ deserting the coasts, appear in large flocks, which find subsistence in picking up the worms and larvæ that have been exposed. These flocks may be met with here and there at long intervals in all the agricultural districts, not only in the neighbourhood of the sea, but in the parts most remote from it. Although they are more numerous in stormy weather, it is not the tempest alone that induces them to advance inland; for in the finest days of winter and spring they attend upon the plough, or search the grass fields as assiduously as at any other time. Frequently they have no companions of other species; but often they mingle with Tarrocks, and sometimes with Herring-Gulls. Should the country become covered with snow they retreat to

the shores; but when the thaws have partially exposed the ground they return. At this season they almost entirely desert the more northern sterile parts of Scotland, advance southward, and are dispersed over the whole country. This species has a light buoyant flight, during which it often inclines to either side. It walks and runs prettily with short steps, pats the sands at the edge of the water with its feet, emits a shrill somewhat harsh cry, and is apt to give the alarm to other birds at the approach of the sportsman. It is not, however, nearly so timid, or at least so sensible of danger, as the larger Gulls, and, either in the fields or on the sea-shore, often allows a person to come within shot. Often also, when one has been killed or wounded, its companions, after flying off, collect again, hover around, or even alight, when some of them may often be obtained. When feeding along with Rooks, in pasture-ground, they are often found to be less wary than these birds, especially in places where they are not much liable to be molested. They never, I think, molest any other bird, nor are they at all addicted to quarrelling among themselves. Their food consists of small fishes, such as sand-eels and young herrings, which they pick from the water, first hovering with extended and elevated wings, then descending, spreading their tail, and letting down their feet, with which I have often seen them pat the water, as if they were running on land. They never plunge so as to be immersed, but merely seize on what comes close to the surface. They also feed upon stranded fishes of large size, asteriæ, mollusca, shrimps, and other small crustacea. Sometimes also they pick up grain in the fields, and in a state of domestication may be partly fed on bread. They are easily tamed; but unless in a garden, or where they are not liable to be teased, they are seldom found to live long in this condition."

The Common Gull breeds on the sea-coast, occasionally, however, also on inland lakes, and makes a somewhat carefully constructed nest amongst the drift stuff on the shore, in which it deposits two or three eggs. Dresser, when collecting in Finland, generally found the latter number in the nests of this species. Macgillivray, writing on their breeding-habits in Scotland, says that about the latter end of April "they disappear from the interior, and betake themselves to their breeding-places. In the Shetland and Orkney islands, in the Outer Hebrides, on the northern and western coasts of Scotland, here and there in the rocky places along the eastern shores, and much more rarely on the western coasts of England and Wales, they are then to be found, often congregated in vast numbers, but also dispersed in pairs. The lower parts of craggy cliffs, rocky peninsulas, and small unfrequented islands, are their favourite stations. I have often, however, found their nests on the turf, along with those of the Herring-Gulls. They are composed generally of fuci, occasionally of grass, bits of turf, and other vegetable substances. The eggs, usually three, sometimes two, are of a broadly ovate form, olive-brown, yellowish brown, oil-green, greenish grey, or greenish white, irregularly dotted and spotted with dark brown and purplish grey, the markings generally larger and more numerous on those which have the ground-colour deepest. They vary in length from two inches and one twelfth to two twelfths more, and have an average breadth of an inch and a half." Mr. Robert Collett found it breeding in Norway on the freshwater lakes, at an altitude of nearly 4000 feet above the sea-level,—as, for instance, on the Bygdin Lake, on the Jotunfjeld, and on Jøderen he met with it nesting on the tussocks in the marshes. On Gottland Dr. Ludwig Holtz found its nest on the drift stuff thrown up by the tide, as well as on the sun-dried *Zostera marina*, just below where the grass commences to grow; the nest itself is made with a neat foundation of dried grass. In one instance he found

a nest in a deserted Crow's (*Corvus cornix*) nest on a *Cratægus* bush, near the shore, about ten feet from the ground; and, according to the peasants, the same pair had nested there several successive years. Mr. Collett also observed a pair near Trondhjem, in Norway, in the summer of 1868, which had taken possession of an old Crow's nest on the top of a fir tree. The eggs were taken out of this nest; and the Gull laid another lot in the same nest. Mr. Collett further writes that he has known the old birds to perch on trees when any were growing near the nest. In Dresser's collection is a large series of eggs, obtained in the Færoes by Mr. H. C. Müller, and on the coasts of Finland by Dresser himself. These eggs average in size about  $2\frac{4}{10}$  by  $1\frac{2}{10}$  inch, and are brownish olive in colour, marked with dull violet-brown underlying shell-patches and overlying dark brown spots and dabs. Mr. Benzon informs us that he has in his collection pale bluish-white varieties, which have very faint shell-markings and a few small scattered surface-spots, and one egg pale bluish white, unspotted. The measurements he gives as from 52 by 40 to 62·5 by 46 millimetres, one unusually large variety measuring 66·5 by 38·5.

The yolk of the egg, when fresh, is rich orange-yellow, not nearly so dark as the yolk of *L. ridibundus*; and the eggs are excellent eating.

Dr. E. Rey informs us that he has measured fifty eggs of this Gull, which in size average 58·4 by 41·5 millimetres, the largest measuring 64·75 by 41·25, and the smallest 53·5 by 40·75 millimetres respectively.

We may here remark that Mr. Collett informs us that he has been investigating the nature of the food given to the newly hatched young, and examined the contents of the stomachs of three sets of nestlings in down: the first of these, procured on the Foldenfjord on the 1st of July, 1871, were all gorged to the mouth with a species of amphipodous crustacean (*Hyale nilssonii*); the second brood, from the same locality, had been fed on the larvæ of *Noctuæ* and *Tipulidæ*; and the third, a brood of newly hatched young, had been fed exclusively on fish.

In the Plate, we have figured the adult bird in summer plumage in the foreground, and the young, as well as the adult bird in winter plumage, in the background. The adult birds described and figured are in Dresser's collection, and the immature bird, as also the young in down, in the collection of Mr. Howard Saunders.

In the preparation of the above article we have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Leckö, Sweden, May 27th, 1868. *b*, ♂ *juv.* Öland, Sweden, May 16th, 1869. *c*, *d*, *juv. et jun.* Pagham, Sussex (*R. B. S.*). *e*, ♀ *ad.* Central Russia (*Sabanäeff*). *f*, ♂ *ad.* Smyrna, Asia Minor, December 19th, 1871 (*Dr. Krüper*).

*E Mus. Howard Saunders.*

*a*, ♂ *juv.* Hempstead. *b*, ♂, *c*, ♀, *d*. Orkneys, May. *e*, *juv.* Orkneys, September. *f*, *juv.* Orkneys, December (*Dunn*). *g*. Asia Minor. *h*. Amoy (*R. Swinhoe*). *i*, *pullus.* Orkneys (*Dunn*).

*E Mus. J. H. Gurney, jun.*

*a*, *b*. Greatham. *c*, *d*, ♂. Bamborough, April. *e*, *f*. Rye, Sussex. *g*. North Wales (*J. H. G., jun.*). *h*, *pullus.* Orkneys (*Dunn*).





1. AUDOUIN'S GULL.  
LARUS AUDOUINI.  
2. SLENDER-BILLED GULL.  
LARUS GELASTES.

J.G. Keulemans lith.

Humbart imp

## LARUS GELASTES.

(SLENDER-BILLED GULL.)

- Larus gelastes*, Licht. in Thienem. Fortpl. Vög. Eur. pt. v. p. 22. no. 351 (1838).  
*Larus genei*, De Brème, Rev. Zool. ii. p. 321 (1839).  
*Larus leucocephalus*, Boissonneau, fide Keys. & Blas. Wirbelth. Eur. p. 95 (1840).  
*Larus tenuirostris*, Temm. Man. d'Orn. 2nd ed. iv. p. 478 (1840).  
*Xema lambruschinii*, Bp. Faun. Ital. Ucc. p. 135, and pl. (1840).  
*Xema gelastes* (Licht.), Boie, Isis, 1844, p. 192.  
*Xema genei* (De Brème), Boie, ut suprâ.  
*Gavia gelastes* (Licht.), Bruch, J. f. Orn. 1853, p. 102.  
*Larus columbinus*, Golowatschow, Bull. Soc. Imp. Mosc. xxvii. p. 435, tab. 4 (1854).  
 "Gelastes rubriventris, Vieill.," Bp. Naumannia, 1854, p. 216.  
*Chroicocephalus gelastes*, Licht. Nomencl. Av. p. 98 (1854).  
*Gelastes lambruschini*, Bp. Cat. Parzud. p. 11 (1856).  
*Larus subroseus*, Heugl. Syst. Uebers. Vög. N.O.-Afr. p. 69 (1856).  
*Larus brehmii*, Heugl, ut suprâ (1856).  
*Gelastes columbinus* (Golow.), Bp. Consp. Gen. Av. ii. p. 227 (1857).  
*Gelastes lichtensteinii*, Bruch, J. für Orn. 1857, p. 23.  
*Larus lambruschini* (Bp.), Schl. Mus. Pays-Bas, *Lari*, p. 28 (1863).  
*Larus* (*Gelastes*) *gelastes* (Licht.), Gray, Hand-l. iii. p. 116. no. 11007 (1871).  
*Larus* (*Gelastes*) *columbinus* (Golow.), Gray, ut suprâ, no. 11008 (1871).  
 "*Larus grallarius*, Mus. Lugd.," Heugl. Orn. N.O.-Afr. p. 1412 (1873).  
*Larus arabicus*, Hempr., Heugl. ut suprâ (1873).  
 "*Larus roseus*, Génér.," Heugl. ut suprâ (1873, nec Macg.).

### *Figuræ notabiles.*

Bp. *l. c.*; Golowatschow, *l. c.*; Bree, B. of Eur.

♂ *ad.* dorso toto et stragulo delicatè argenteo-cinereis, corpore reliquo toto albo, abdomine et subalaribus pulchrè rosaceo tinctis: remige extimo in pogonio externo ferè ad apicem nigro et nigro apicato, primariis reliquis extùs albis et in pogonio interno fusco-canis, omnibus nigro apicatis: rostro rubro: iride pallidè stramineâ: marginibus palpebrarum et pedibus corallino-rubris.

*Juv.* haud rosaceo tinctis, pileo et nuchâ griseo tinctis: dorso, secundariis intimis et tectricibus alarum fusco-cinereo notatis, remigibus magis nigro notatis, et caudâ versus apicem nigro fasciatâ.

*Adult in summer* (Spain, May). Mantle pale French-grey, palest on the centre of the back; first primary with the outer web black, except near the tip, and tipped with black, the second, third, and fourth

quills white on the outer web, and brownish French-grey on the inner web, the latter becoming dark brown on the edge; all the quills broadly black at the tip; rest of the plumage white, the underparts suffused with rose-colour; bill dark red; iris pale straw-yellow; edge of eyelids coral-red; legs coral-red. Total length about 16 inches, culmen 2·1, wing 12·0, tail 4·5, tarsus 2·1.

*Adult in winter* (Egypt). Differs but slightly from the adult in summer, the plumage being as nearly as possible similar; but the bill is orange-yellow and the legs lemon-yellow in the fresh-killed bird.

*Young in winter* (Albania). Differs from the adult in having rather more black on the primaries, in lacking the rosy tinge on the breast, in having the crown and nape marked with grey, and the back, inner secondaries, scapulars, and wing-coverts marked with ashy brown, and the tail with a terminal blackish band.

THIS Gull inhabits Southern Europe and North Africa, ranging as far east in Asia as Sindh, and, on the West-African coast, going as far south as Senegal. It has not, so far as I can ascertain, been met with further north in Europe than in Southern France and Spain. According to MM. Degland and Gerbe it appears about the mouths of the Rhône, in Southern France, early in spring, and breeds on some of the low sandy islands there. Crespon (*Faune méridionale*, ii. p. 126) gives particulars of its nidification; and it has since then, I am told, been seen there. M. Adrien Lacroix says that two examples were obtained near La Nouvelle, in Aude, on the 5th April 1869, and one was captured near Cette, in Hérault, late in March 1857. It is now with certainty known to breed in Spain. Mr. Howard Saunders stated (*Ibis*, 1871, p. 400) that he strongly suspected that it bred at the mouth of the Guadalquivir, near San Lucar de Barrameda; but he does not appear to have obtained a Spanish-killed specimen. Lord Lilford, however, has lately received a fine series of eggs from Isla Mayor, on the Guadalquivir; and I am indebted to him for the loan of an unusually fine specimen to figure. I do not find any record of its occurrence in Portugal; and Professor Barboza du Bocage only includes it with a query; but it is widely distributed in the Mediterranean. No occurrence, however, is recorded from the mainland of Italy by Salvadori; but Doderlein states that a specimen was recently sent from Modena, and was said to have been killed in the lower part of that province. On the coasts of Sardinia it is said to be resident; and it is much less rare than was supposed on the coasts of Sicily, there being several examples in the Museum of Palermo. Mr. Howard Saunders informs me that he frequently saw it between Sicily, Malta, and Gibraltar in spring. It appears, however, to be rare in Malta; for Mr. C. A. Wright states (*Ibis*, 1864, p. 151) that, though he believes he saw it on several occasions flying about in the harbour, he never succeeded in shooting one; but there are, he adds, two Malta-killed specimens in the University Museum. According to Dr. Krüper it has been obtained in Acarnania in December, and in Attica in November; and it is said to be tolerably common in the Greek archipelago. Messrs. Elwes and Buckley say (*Ibis*, 1870, p. 337) that they shot it in the Gulf of Volo, and believe that it is common in the Levant. Dr. Cullen has sent numbers of specimens both of birds and eggs from near Kustendji, in Turkey, where he found it breeding numerously; and it is said to be found not uncommonly in Southern Russia. I have seen specimens from the coast of Asia Minor. Lord Lilford informs me that he saw one

in the Bay of Macri in May 1875; and Canon Tristram met with it on the coasts of Palestine. It is not uncommon in North-east Africa. Captain Shelley says (B. of Egypt, p. 306), it "ranges throughout Egypt, and is probably a resident in the country. Mr. E. C. Taylor (Ibis, 1867, p. 72) mentions that his party procured a specimen out of a small flock they saw near Keneh, in Upper Egypt. This is the most southern point on the Nile that I am aware of its having been met with." Von Heuglin only met with it on the lagoons and sea-coast. It is to be seen in large flocks at Rosetta, Damietta, and Suez, and on the canal north of the last-named town, and on the flat shores near the small harbours of Arabia Petræa; but he never saw it in summer on the Red Sea. In May and June, however, he observed large flocks on the Etku and Menzaleh Lakes; and he ascertained that it breeds in the lagoons of the Nile delta. Mr. C. W. Wyatt states that it is common in the bay at Tor, in Sinai, and he shot one when returning along the shore from Isbel Nagus. According to Loche it is not rare on the coast of Algeria, and he procured specimens in the harbour of Algiers. It occurs in Tangier, though Favier only records a single specimen as having been obtained by him there in 1852; but Lord Lilford informs me that he found it not uncommon on the great lagoon of El Baheira, Tunis, in November and December 1856; and there is a specimen in the Paris Museum from Senegal, showing that it ranges at least as far south as that district on the west coast of Africa.

In Asia the present species is found as far east as Sindh. It is common on the shores of the Caspian; and Mr. Blanford writes (Eastern Persia, ii. p. 292):—it is "very common on the Makrán coast and in the Persian Gulf, Hume says more so than any other species at Karáchí; but I think along the coast in November and December (six weeks earlier in the year than Mr. Hume's visit, which may have made a considerable difference) both *Larus argentatus* and *Larus hemprichi* were more numerous everywhere, except at Iáshk, where I saw more of the present species. At Gwádar I did not observe *Larus gelastes* at all." Speaking of its occurrence in the Persian Gulf, Mr. Hume writes (Stray Feathers, i. p. 274) as follows:—"This lovely species is numerically the most abundant of all that frequent the Kurrachee harbour, and all the way up the Gulf of Oman in suitable localities I met with vast flocks of it. Towards midday it gathers together at the point of some long sandy spit stretching far out into the water, or else congregates on some tiny islet, and there suns itself, hundreds of them closely packed within the space of a few square yards, close to the water's edge. Sometimes one or two Sooty Gulls, conspicuous in their mourning weeds, may be detected amongst them, or a small party of *Thalasseus bengalensis* or *Thalasseus cantiacus*; but as a rule they are very exclusive, and admit no other bird into their company. Some little distance apart one or two huge Black-headed Gulls or a little group of *Larus ridibundus* will be seen; but these do not mingle with the Slender-bills at the time of their noonday siesta.

"This species, which has hitherto only been recorded from the Mediterranean and the Caspian Sea, appears to have its head quarters, at any rate during the winter, in the northern parts of the Indian Ocean and the Gulfs of Oman and Persia; no other sea-bird did I see collected in such vast flocks as this species.

"Just inside the Kurrachee harbour, under the lee of the Minora headland, a strip of sand affords them a sunny resting-place; and there daily in the cold weather, from about 11 till 2 or 3

o'clock, thousands may be seen congregated together, looking from Minora itself like a huge white sheet. They are very tame; and a dozen may be secured at a single shot."

I have never had the good fortune to see the Slender-billed Gull in a wild state, and can give no details respecting its habits from personal observation. It appears to frequent the coasts, and to range but seldom inland; but it affects low sandy localities during the breeding-season, and is generally found near saltwater lagoons, where it breeds, like its allies, on the ground. Until within the last few years but little was known about the breeding-habits of this Gull, and its eggs were rare in collections; but large numbers have since been sent from Turkey by Dr. Cullen. This gentleman has given a very good account of the nidification of this species, which was communicated to 'The Field' by Dr. Bree, and which I transcribe as follows:—"At various places along this coast the sandy shores are only raised one to two feet above the sea-level, separating it by a narrow belt of sand from large spaces or lagoons of shallow brackish water, in which, again, are small islets partially covered with reeds, and often joined to others by long narrow sand-bars. A lengthened and even tiresome examination of one of these localities was at last rewarded by the discovery of a colony of Slender-bills. The nest, neatly made of seaweed, but containing no wool or lining whatever, covered a space 30 feet long by 15 feet broad on the bare open sand, distant on one side by about 8 feet to 10 feet from a large colony of Caspian Terns, and on the other all but intermingling with some of *Sterna minuta*, only one nest of this latter being found in the midst of the Slender-bills. All contained eggs; and, though there could be no doubt that we had discovered one great object of our search, we left them untouched, drew up our boat on shore, selected a suitable spot for camping on during the night, under the shelter of some reeds at a distance from the nests, and then, choosing the most characteristically marked eggs, we set our traps; and some birds having been caught, we had the pleasure in the morning of securing some really authentic eggs of this rare bird. No nest contained more than three eggs. At first they were not at all shy. On being disturbed they uttered a cry very much resembling the call of the Rook, but more prolonged, softer, and less harsh. On rising against the sun, as they kept together in a compact body and did not at all mix with any of the other species, the rosy tint of their breasts presented a most beautiful sight, glowing like a summer cloud coloured by the setting sun. On the female returning to her nest, the male invariably accompanied her, and remained standing by it. Their food consists entirely of a species of beetle (*Dytiscus*); and of these their stomachs were quite full. The day after the capture of a second lot the spot was entirely deserted by the rest. When fresh and lying in the nest, the eggs had the same delicate tint which is so noticeable in the breast of the living bird. This in the latter fades in an hour after death, and loses half its brilliancy, and in the former disappears after being blown."

In my collection are several eggs of the Slender-billed Gull obtained by Dr. Cullen, and three from the Guadalquivir, which vary a good deal in markings. The ground-colour is white in some with a warm tinge; and the markings, which consist of spots and blotches, are blackish brown and dark umber-brown in the surface-blotches, and purplish grey in the shell-spots. One of the eggs from Spain is especially richly blotched with deep umber-brown; and one or two from Turkey are but sparingly marked with small blackish-brown spots. In size they vary from  $1\frac{3}{4}$  by  $1\frac{2}{4}$  to  $2\frac{6}{4}$  by  $1\frac{2}{4}$  inch.

As the immature bird shows such slight differences from the young of allied species, I have only figured, on the same Plate with *Larus audouini*, the adult male in summer dress above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a.* Southern Danube. *b.* Crimea (*Whitely*). *c, jun.* Albania (*H. Barclay*). *d.* Egypt, winter. *e, ♀.* Turkestan, July 30th, 1860 (*Severtzoff*).

*E Mus. Lord Lilford.*

*a, b, ad.* Smyrna, winter (*Gonzenbach*). *c, ♂.* Isla Major, Guadalquivir, S. Spain, May 21st, 1877 (*Ruiz*).



## LARUS AUDOUINI.

(AUDOUIN'S GULL.)

*? Larus quadricolor*, Scop. Ann. i. Hist. Nat. p. 81. no. 109 (1769).*Larus audouini*, Payraudeau, Ann. Sc. Nat. viii. p. 462 (1826).*Larus payraudei*, Vieill. Faun. Franç. Ois. p. 396, pl. 172. fig. 1 (1828?).*Gavia audouinii* (Payr.), Boie, Isis, 1844, p. 191.*Glaucus audouini* (Payr.), Bruch, J. f. O. 1853, p. 102.*Gavina audouini* (Payr.), Bp. Naumannia, 1854, p. 212.*Laroides audouini* (Payr.), Bruch, J. f. Orn. 1855, p. 282.*Larus (Leucus) audouini* (Payr.), Gray, Hand-l. iii. p. 113. no. 10967 (1871).*Figuræ notabiles.*

Temm. Pl. Col. 480; Gould, B. of Eur. pl. 438.

*Ad.* albus vix auroreo tinctus: stragulo delicatè cærulescenti-cinereo: primariis duobus extimis nigricantibus, versus apicem albo notatis, reliquis canis, versus apicem nigricantibus et albo apicatis: rostro corallino-rubro, versus apicem nigro fasciato: iride fuscâ, marginibus palpebrarum rubris: pedibus saturatè plumbeis, unguibus nigris.

*Adult Male* (Toro, May). Back and entire mantle pale French-grey or pearl-grey; first two primaries black, with a large white spot at the tip; remainder French-grey, black towards the tip, and tipped with white, rest of the plumage pure white, the underparts sometimes with a faint rosy tinge; legs and feet dark lead-grey, claws black; bill coral-red, with a black band at the tip; iris hazel, edge of the eyelids coral-red. Total length about 20 inches, culmen 2·35, wing 15·7, tail 6·5, tarsus 2·4.

*Adult Female* (Toro, May). Undistinguishable in plumage from the male.

THE range of this Gull is, so far as is at present known, extremely limited; for it has only been obtained in the Mediterranean, chiefly about the Italian coasts, and thence across to the coasts of Africa. MM. Jaubert and Barthélemy-Lapommeraye say that it is accidental on the Mediterranean coasts of France; but they cite no instance of its occurrence. Natterer records it as having been once obtained near Tarifa, in Spain; and Von Homeyer states (J. f. Orn. 1862, p. 431) that he "saw it on three occasions on the coasts of Majorca, in the Balearic Isles and Algiers." According to Salvadori it is of rare occurrence off the coasts of Italy. Two examples were obtained in Liguria; and it is said to have occurred near Venice. Cara cites an instance of one having been killed near the island of Maddalena, in Northern Sardinia, in 1858; but Mr. A. B. Brooke states that it is certainly very rare there, though it is said to be not uncommon about the Straits of Bonifacio. Professor Doderlein cites three instances of its occurrence in Sicily—two adults, now in the museum, obtained at Palermo, and one near

Girgenti. Lord Lilford found it breeding on the island of Toro, off Sardinia; and I give his notes below *in extenso*.

Canon Tristram told Mr. Wright that he believed he saw it at Malta, but he might have been mistaken. It occurs off the coasts of Greece, but is rare, as Dr. Krüper remarks that he never met with it. Lord Lilford says (*Ibis*, 1860, p. 356) that a fine specimen was killed near Corfu in May 1857, and he believes that it is not very uncommon. According to Erhard it winters in the Cyclades. Eastward of the Greek archipelago I do not find any reliable record of its occurrence. Canon Tristram (*Ibis*, 1868, p. 330) states that he found it common on the Lake of Galilee, in Palestine; but all his specimens proved subsequently to be *Larus canus*; and Mr. E. C. Taylor states (*Ibis*, 1859, p. 55) that he saw what he believed to be this species some distance above Cairo, but he did not succeed in obtaining one. According to Loche it is "found on the shores of Algeria, where it breeds;" but he gives no further details.

But little is known respecting the habits of this rare Gull; and indeed there is nothing of any importance on record, excepting some excellent notes by Lord Lilford (who was fortunate enough to find it breeding off Sardinia), which I transcribe as follows (*Ibis*, 1875, p. 30):—"A good many Herring-Gulls were nesting about the summit [of the island of Toro]; and my men, some of whom landed, brought off two young birds in the down. As we lay close off the rocks in the boats, watching for shots at the Falcons, I suddenly heard behind me the cry of a Gull quite new to me, turned sharp round at the sound; the bird was rather high up, but I knocked him down; he fell on the rocks close to us, but I could not see him as he lay. One of the men jumped out and picked him up; and judge of my joy, ye Ibises, when I found that he was a beautiful adult *Larus audouini* (male), in full breeding-plumage!

"We had noticed that a small colony of Gulls seemed to have established itself upon the slope of the rock on the eastern side, apart from the main establishment about the summit and western portion; but as their general appearance was very like that of the Herring-Gull (at a distance), I had not paid any particular attention to them. Now, however, when they took wing at my shot, I noticed that their wings seemed much longer, and now and then the brilliant red bills and dark-coloured legs were conspicuous. I landed one of my men, with particular instructions to search the spot where we had seen the Gulls; and he very soon came down to the boat with six eggs, varying a good deal in markings, and like those of *Larus leucophæus*, but just the size I wished. I had particularly told the finder to bring any of the Herring-Gull's eggs; but he assured me that he found none, though he searched for a considerable time.

"The six eggs above mentioned were in five nests, one of which contained two and the others one respectively. There were several empty nests, but no young birds visible.

"In the meantime the parent birds had gone right off to sea in a body of perhaps twenty or thirty, and were coming back to see what we were about, but so cautiously and at such a height that, though I fired several shots, I could not manage to bring down another specimen. The rest of the men, who had landed and clambered up to the top, reported great numbers of nests, eggs, and young of Herring-Gull; but I had told them not to rob them, as we had such a series from Vacca. It was very evident, and a curious fact, that the Audouin's Gulls had their establishment entirely apart from their congeners; and certainly they are naturally much more wary."

He further adds (*l. c.* p. 34):—"The general appearance of *Larus audouini* on the wing is certainly more like that of *Larus leucophæus* than that of any other Gull with which I am acquainted; but the wings seem conspicuously longer, and of course at a short distance the brilliant red bill is a clear distinction. The cry is not so harsh, and more prolonged than that of the latter species."

I have been unable to procure a specimen of this rare Gull for my own collection, and am indebted to Lord Lilford for the loan of the adult male I have figured on the same Plate with *Larus gelastes*.

In the preparation of the above article I have examined the following specimens:—

*E Mus. Lord Lilford.*

*a*, ♂ *ad.*, *b*, ♀, *c*, ♀. Island of Toro, May 26th and 28th, 1874 (*Lilford*).

*E Mus. Howard Saunders.*

*a*, ♂ *juv.* Harbour of Palermo, Sicily, February 1866 (*Professor Doderlein*).







HERRING GULL  
LARUS ARGENTATUS

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YELLOW-LEGGED HERRING GULL  
LARUS LEUCOPHAEUS

## LARUS ARGENTATUS.

(HERRING-GULL.)

- Larus cinereus*, Brisson, Ornith. vi. p. 160. no. 2. pl. 14 (1760).  
*Larus argentatus*, Brünnich, Ornith. Borealis, p. 45. no. 149. "Christiania" (1764).  
*Larus fuscus*, Pennant, Brit. Zool. ii. p. 131 (1768), nec Linn.  
*Goiland cendré*, D'Aubenton, Pl. Enl. 253.  
*Le Goëland à manteau gris*, Buffon, Hist. Nat. Ois. viii. p. 406, pl. 32 (1781).  
*Larus argentatus*, Gm. S. N. i. p. 600. no. 18 (1788), ex Brünn.  
*Larus marinus*, var.  $\beta$ , Latham, Ind. Ornith. ii. p. 814 (1790), ex Brünn.  
*Larus glaucus*, Retzius, Fauna Suecicæ, i. p. 156. no. 116 (1800), nec Brünn.  
*Larus glaucus*, Brünnich, Wolf & Meyer, Taschenb. ii. p. 471. no. 3 (1810), nec Brünn.  
*Larus fuscus*, Montagu, Orn. Dict. vol. i. (1802), nec Linn.  
*Larus glaucus*, Benicken, Annal. Wetter. Gesells. Naturk. iii. p. 138 (1812), nec Brünn.  
*Larus glaucus*, Linn., Temm. Man. d'Ornith. p. 493 (1815), nec Linn. (Gm.).  
*Larus argentatus*, Brünnich, Wolf & Meyer, Zusätze Taschenb. p. 195 (1822).  
*Larus argenteus*, C. L. Brehm, Beitr. z. Vögelkunde, iii. pp. 781, 799 (1822).  
*Larus argentatoides*, C. L. Brehm, tom. cit. pp. 791, 799 (1822), "north-east of Germany, west coast of America."  
*Larus argentatoides*, Bp. (*motu propr.*), Ann. Lyc. New York, ii. p. 360. no. 299, "Eastern N. America, England" (1828).  
*Larus argentatoides* (Bp.), Swains. & Richardson, Fauna Boreali-Americana, *Aves*, p. 417. no. 2, "Melville peninsula" (1831).  
*Laroides major*, C. L. Brehm, Handbuch Vögel Deutschlands, p. 738. no. 1, "north-east of Germany" (1831).  
*Laroides argentatus* (Brünnich), C. L. Brehm, op. cit. p. 740. no. 2 (1831).  
*Laroides argenteus*, C. L. Brehm, op. cit. p. 741. no. 3, "Dutch coast, perhaps on the French coast, seldom on the German" (1831).  
*Laroides argentatoides*, C. L. Brehm, op. cit. p. 742. no. 4, "Swedish, Norwegian, and Danish coasts, in winter Pommeranian and Holstein coasts" (1831).  
*Laroides argentaceus*, C. L. Brehm, op. cit. p. 742. no. 5, "Holland, German coast of the North Sea, Færoes" (1831).  
*Laroides americanus*, C. L. Brehm, op. cit. p. 743. no. 6 (1831), = *Larus argentatoides*, C. L. Brehm, ex America.  
*Larus argentatoides*, Swains. & Richardson, Thompson, P.Z.S., 1835, p. 83, "north of Ireland."  
*Larus argentatus*, Brünnich, Bp. Birds Europe and N. Amer. p. 63. no. 472, "Europe and America generally" (1838).  
*Larus argentatus*, Brünnich, Temm. Man. d'Orn. ii. p. 764 (1820); op. cit. iv. p. 470 (1840).  
*Larus argentatus*, Brünnich, Keyserl. & Blasius, Wirbelth. Eur. i. p. 244. no. 476 (1840).

- Larus argentatoides*, Richardson, Schinz, Europ. Fauna, i. p. 380, "North America" (1840), conf. Schlegel, Rev. Crit. p. 112.
- Larus argentatus*, Brünnich, Schlegel, partim, Rev. Crit. Ois. d'Europe, p. cxxiv. no. 133, "northern regions of the Old World" (1844).
- Larus argentatus*, Brünnich, Degland, Ornith. Europ. ii. p. 306. no. 298, "Northern and Eastern Europe" (1849).
- ?*Larus affinis*, J. Reinhardt, Vid. Medd. 1853, p. 78, "Greenland;" J. f. O. 1854, p. 433. no. 12; Ibis, 1861, p. 17. no. 110.
- Glaucus argentatus* (Brünnich), Bruch, J. f. O. 1853, p. 101. no. 15, "Northern Europe."
- Glaucus argentatoides* (Richardson), Bruch, loc. cit. no. 16, "North America" (1853).
- Laroides argentatus* (Brünnich), Bp. Naumannia, 1854, p. 212. no. 22, "Atlantic, Mediterranean, Black Sea."
- Laroides argentatoides* (Richardson), Bp. loc. cit. no. 23, "North America" (1854).
- Laroides argentatus* (Brünnich), Bruch, J. f. O. 1855, p. 282. no. 23, "Northern Europe."
- Laroides argentatoides* (Richardson), Bruch, loc. cit. no. 24, "North America" (1855).
- Larus argentatoides*, Richardson, Bp. Rev. Zool. 1855, p. 16, "North America."
- Laroides argentatus* (Brünnich), Bp. Consp. ii. p. 218. no. 1, "Northern and Western Europe, Atlantic, Mediterranean, and Black Sea" (1857).
- Laroides argentaceus*, C. L. Brehm, Bp. loc. cit. no. 2 (1857).
- Laroides argentatoides* (Richardson), Bp. loc. cit. no. 3, "Florida, Texas, Canada" (1857).
- Larus argentatus*, Brünnich, Hartl. Syst. Ornith. W. Afrik. p. 251. no. 709, "Senegal" (1857).
- Larus argentatus*, Brünnich, Lawrence, Birds N. America, p. 844, "Atlantic coasts, Texas to Newfoundland, Western States, Ohio and Mississippi rivers" (1860).
- Larus smithsonianus*, Coues, P. Ac. Philad. 1862, p. 296. no. 8, "America."
- Larus argentatus*, Brünnich, Schlegel, Mus. Pays-Bas, *Lari*, p. 16, partim (1863).
- Larus argentatus*, Brünnich, Blasius, J. f. O. 1865, p. 380. no. 25, partim.
- Larus argentatus*, Brünnich, Barboza du Bocage, Jorn. Sc. Lisb. 1868, pp. 149, 330, "Angola, Porto Alexandre."
- Larus argentatus*, Brünnich, Coues, Key N. Am. Birds, p. 312, "N. America" (1872).

(The above by Lord Walden.)

*Herring-Gull*, *Silvery Gull*, English; *Goéland argenté*, French; *Silbermöwe*, German; *Alcatraz*, *Gaivota*, Portuguese; *Garça branca*, Azorean; *Kobber*, *Zilvermeeuw*, Dutch; *Havmaage*, Danish; *Fiskji maasi* (ad.), *Skuri* (juv.), Færoese; *Stor Graamaage*, Norwegian; *Gråtrut*, Swedish; *Tschaika serebristarga*, Russian (*Kessler*); *Mewa srebrzysta*, Polish (*Taczanowsky*).

*Figuræ notabiles.*

D'Aubenton, loc. cit.; Audubon, Birds Amer. pl. 448; Gould, Birds Eur. pl. 434; Naum. Vög. Deutsch. taf. 266; Werner, Atlas, *Palmipèdes*, pl. 14; Kjærb. Orn. Dan. taf. xlii.; Fritsch, Vög. Eur. pl. liv. fig. 12; Sundevall, Svensk. Fogl. pl. l. figs. 1, 2; Schlegel, Vög. Nederl. pls. 347, 348; Gray, Gen. of Birds, ii. p. 180, fig. 5.

♂ ad. æst. albus: dorso, scapularibus tectricibusque alarum pulchrè et pallidè canis: tectricibus majoribus et

scapularibus conspicuè albo terminatis : primario externo nigro versùs apicem albo, fasciâ subapicali nigrâ, secundo et tertio nigris ad basin canis et albo terminatis, reliquis canis, versus apicem nigris et albo apicatis, secundariis pallidè canis albo terminatis : rostro pallidè flavo, mandibulâ maculâ subapicali sanguineâ : iride flavicanti-griseâ : pedibus pallidè carneis.

♀ mari similis, sed minor.

*Ptil. hiem.* similis æstivali, sed capite et collo pallidè fusco striatis.

*Adult Male* (Orkneys, summer). Head, neck, rump, tail, and entire underparts pure white ; entire mantle or the back, scapulars, and wing-coverts delicate light French grey ; larger wing-coverts, secondaries, and scapulars broadly tipped with pure white ; outermost primary almost entirely blackish, white towards the tip, and crossed by a subapical black band ; the next two grey at the base, black towards the tip, being finally terminated with a large white spot ; the remaining primaries grey, except towards the tip, where they are black, finally tipped with white ; secondaries pale grey, tipped with white ; beak pale yellow, with a large red spot at the angle of the lower mandible ; iris yellowish grey, margins of the eyelids yellow ; legs and feet flesh-colour. Total length 23 inches, culmen 2·65, wing 16·7, tail 6·75, tarsus 2·5.

*Adult Female.* Similar to the male, but somewhat smaller.

*Young.* Similar in plumage to the young of *Larus fuscus*.

*Winter plumage.* Similar to the summer plumage, except that the head and neck are striated with pale brown.

I have carefully compared examples of the present species in immature plumage and in down with specimens of *Larus fuscus* and *L. marinus*, and cannot find any character by which they may be distinguished, except as regards the young of *L. marinus*, which are larger. Mr. R. Collett, who has also tried to ascertain some sure mode of distinguishing them, writes that "it is almost impossible to distinguish the young of *L. argentatus* from those of *L. fuscus* and *L. marinus* at the same stage of growth, the spots on the head and body being distributed in precisely the same manner in each."

*Obs.* Of the Herring-Gull there are three distinct species or races :—*Larus argentatus*, the range of which is given below ; *Larus leucophæus*, which is found in Eastern and South-eastern Europe and Northern Africa ; and *Larus occidentalis*, which inhabits Asia and China (extending westwards to the Mekran coast, where it meets *L. leucophæus*) and the west coast of North America. I am not certain as to whether this last species (*L. occidentalis*) should not bear the name of *L. cachinnans*, Pall., as this author clearly refers to a Gull having flesh-coloured legs and a dark mantle in his description of that species ; but he likewise speaks of it as inhabiting the Caspian and Asia, and has evidently confused *L. leucophæus* and *L. occidentalis*, and I have therefore deemed it best to retain the name *L. occidentalis* for the species having the very dark mantle and flesh-coloured legs. In the colour of the mantle *L. argentatus* is the lightest, and *L. occidentalis* much the darkest, *L. leucophæus* being intermediate between the two. As regards measurements all the three species vary very much, as will be seen by the following table.

I have measured altogether nearly fifty specimens, but have not deemed it necessary to record the measurements of each specimen, and have therefore picked out a fair average series of *L. argentatus*, leaving out those that have not been sexed. The last two specimens of this species on the list were carefully compared with the types of *Larus smithsonianus* by Dr. Coues, and sent to me as agreeing precisely with them.

			Culmen. inches.	Wing. inches.	Tail. inches.	Tarsus. inches.
<i>L. argentatus</i>	. . . . ♂	Uddenvalla, Sweden.	3.0	16.8	6.9	2.4
"	. . . . ♂	St. Petersburg.	3.3	17.9	6.9	2.65
"	. . . . ♂	Orkneys.	2.8	16.9	6.8	2.4
"	. . . . ♀	do.	2.8	15.8	6.6	2.35
"	. . . . ♀	Pagham, Sussex.	2.75	16.0	6.4	2.4
"	. . . . ♂	Labrador.	3.2	16.0	7.0	2.5
"	. . . . ♂	Rupert House, Hudson's Bay.	3.4	17.5	6.8	2.7
"	. . . . ♂	Fort Maçon, N. Carolina.	3.3	17.8	7.2	2.8
<i>L. leucophæus</i>	. . . . ♂	Schinades, near Missolonghi.	3.4	17.4	7.0	2.5
"	. . . . ♂	do.	3.6	17.8	7.1	2.5
"	. . . . ♀	do.	3.05	16.6	6.6	2.5
"	. . . . ♀	do.	3.1	17.3	6.8	2.5
"	. . . . —	Capri.	2.9	16.8	6.6	2.5
"	. . . . —	Genoa.	2.8	16.6	6.5	2.5
"	. . . . ♂	Valencia, Spain.	3.2	18.2	7.1	2.7
"	. . . . ♂	Algiers.	3.1	18.5	7.7	2.85
"	. . . . ♂	Gwador, Baluchistan.	3.0	16.5	6.5	2.4
"	. . . . ♂	do.	3.2	17.2	6.8	2.7
"	. . . . ♀	do.	3.0	17.0	6.7	2.5
<i>L. occidentalis</i>	. . . . ♀	Pacific beach, California.	3.1	16.2	6.2	2.6
"	. . . . juv.	do.	2.8	def.	5.8	2.5
"	. . . . —	Amoy, China.	3.1	17.2	6.8	2.5
"	. . . . —	do.	2.8	16.6	6.5	2.5
"	. . . . juv.	do.	3.0	17.1	6.5	2.5

THE Common Herring-Gull is found throughout Northern and Central Europe, eastward into Russia, and, during the winter season, throughout Southern Europe. It is also met with in North-eastern America. In Great Britain it is very widely distributed, being found on most parts of the coast during the breeding-season wherever it can meet with suitable places for the purposes of nidification. It does not, however, appear to breed on the Somersetshire coast; for Mr. Cecil Smith writes to me as follows:—"I have never been able to find that either this bird or the Common Gull breeds in any part of our Somersetshire coast; a little further down the Channel, on the Devonshire coast, at Lundy Island, and across on the Welsh side about Tenby and the Stack Rocks they do in great numbers. The western part of our coast, from Minehead to Culbone, is so thickly wooded down to the sea that there is no suitable place for Gulls to breed in. There are a few places further east on our coast, as Bream Down, near Weston-super-Mare, that appear more suitable; but I visited these places both this year and last, and took some pains to find out what birds were breeding there, and I found no Gulls at all in adult plumage; all the birds I saw were young ones in their second or third year, at which time I do not believe they are allowed to approach the breeding-stations: at least at all the great breeding-stations I have visited this is so. In Guernsey this appears very conspicuously, as young Herring-Gulls two or three years old may be seen about the harbour, but never at the breeding-stations in that island, or in the opposite island of Sark, though only seven miles off.

"A few Lesser Blackbacks breed with the Herring-Gulls in the Bristol-Channel breeding-stations; and the same may be said of the Channel Islands. In the very large breeding-stations at Guernsey, Sark, and Alderney the Herring-Gulls are immensely more numerous than the Lesser Blackbacks—I should think, at least fifty pair of the Herring-Gull to one pair of the Blackback." In the north of England and in Scotland it is common; and Mr. R. Gray writes, that "from Ailsa Craig northwards to the Shiant Isles and the cliffs of Cape Wrath, the Silvery Gull, as this species has been called, has numerous breeding-places. For the most part it prefers nesting on the turf near the summit of its sea-beaten haunts, and is therefore found at times in colonies, not mixing with, but sitting alongside groups of Lesser Blackbacks as well as the Great Blackback, forming a large but harmonious family of Gulls, conspicuous at a great distance when viewed from the sea, and looking like large white flowers among the grass. It is very abundant on all the shores, including those of the outward islands, where I have observed it to be very tame. Those bred at St. Kilda and Haskeir rocks betake themselves in autumn to the western side of the islands of Harris, North Uist, Benbecula, and South Uist, and are easily approached. I have shot very interesting specimens there showing the last remains of the immature plumage sprinkled in brown spots over the back of the birds and the wing-coverts, giving them a marbled appearance, the rest of the plumage being complete. On the eastern shores this bird is nowhere more common in early spring than in Fifeshire. On Leven sands they assemble in companies numbering thirty or forty birds, and show so much tameness that I have at times walked up to a group at rest within twenty-five yards without causing the birds to take wing. On the shores of East Lothian, and the adjoining county of Berwick, Herring-Gulls are also very numerous. A few pairs breed on the Bass rock; but the principal station for the species in the district is that part of the Berwickshire coast between St. Abb's Head and Fast Castle, where there are numerous pointed stacks of rock standing apart from the headland and affording the Gulls a safe refuge. The nests are placed at various elevations on these isolated rocks, from the topmost peak to within a few feet of high-water mark, so that, should a storm arise during the breeding-season, the nests are occasionally in danger of being swept away." In Ireland it is, Thompson states, common around the coast throughout the year.

It has been met with in Greenland, but is excessively rare in that country; and Professor Reinhardt writes that he himself knows of but one instance of its occurrence, an adult bird in winter plumage having been shot at Godthaab about the year 1850, but he was told of two or three more which have been obtained in Greenland; and it is likewise found in Labrador. It breeds on the Færoes, where it is said to attain a great age, but has not been recorded from Iceland. In Norway it is, Mr. Collett writes, resident and abundant up to the Russian frontier, along the line of coast, but less frequently found nesting on the shores of the freshwater lakes. In the interior it has been observed on Mjösen and Fiskumvand. Sommerfelt states that on the Varanger Fiord it breeds on the freshwater lakes. In Sweden it is, Nilsson states, "more numerous on the eastern than on the southern coast; on the Carlsöarna it is numerous during the breeding-season, and is found here and there on the island of Gottland." Mr. Meves writes that it is not common on Oland, but he met with it along the Finnish coast, and states that it "probably occurs on the White Sea." I have shot Herring-Gulls similar to our common British species on several parts of the coast of Finland; but it is difficult to define the range of this

species in Russia, as Mr. Meves shot the closely allied *L. leucophæus* on the Dvina, near Chologory, and it is very probable that many naturalists, writing on Russian ornithology, have not distinguished between these two species. Mr. Sabanäeff informs me that the present species is "a migrant in the Governments of Jaroslaf and Moscow, but breeds in the south-eastern portion of the Government Vologda. According to Eversmann and Bogdanoff, it breeds on the banks of the Volga, the Kama, and the neighbouring lakes; it feeds on fish, snails, and even dead birds. It places its nest, in which it deposits from two to three eggs, close to the edge of the water." This gentleman informs me, however, that the species he met with in the Ural is the southern subspecies above referred to (*L. leucophæus*). It is, however, the present species which occurs on the coasts of the Baltic provinces. Mr. Taczanowski informs me that it is only "an accidental visitor and very rare in Poland. The only specimen which I have seen in the country is in the Warsaw Museum; it was killed in midwinter, in the district of Lublin, and is an immature bird." On the coasts of Pomerania it is likewise rare, occurring, according to Borggreve, out of the breeding-season, and not remaining during the winter.

In Denmark it is common, and, according to Kjærbølling, breeds on many parts of the coast, as at Veirö, Munsholm, Sprogö, Hesselö, Hjortholm, Skallingen, Sylt, and Amrum. On the coasts of the North Sea it breeds, Borggreve states, here and there in large colonies, as, for instance, on List and Rottum, but leaves during the winter. De la Fontaine records its appearance on the Moselle in bad weather; and Godron states that it occasionally occurs near Metz. Degland and Gerbe speak of it as common on the northern coasts of France, nesting in suitable localities—and further state that it is numerous at the mouth of the Scheldt, and on the Meuse and the neighbouring marshes, after storms. Jaubert and Barthélemy-Lapommeraye include it in their work on the birds of the south of France without giving any details. It is most difficult to define the range of the present species in Southern Europe, as it there meets with its close relative, *L. leucophæus*, and most authors in writing on the ornithology of Southern Europe do not distinguish between these two species. So far as I can ascertain, it appears that the present species does not breed in Southern Europe, being only found there during the winter season, whereas *Larus leucophæus* is the species referred to by numerous authors, under the name of *L. argentatus*, as breeding on the coasts of the Mediterranean.

Professor Barboza du Bocage writes that the present species is common at Tejo, in Portugal; and Mr. Howard Saunders, a well-known authority on Gulls, states that it is "abundant in winter on the coast of Spain, especially *outside* the Straits of Gibraltar; *within* these Straits it gives place to its congener, *L. leucophæus*."

All that can be said respecting the present species in Southern Europe is that it occurs there during the winter season, being more or less common in various parts of the Mediterranean. Mr. C. A. Wright states that in Malta it is "one of the commonest species in winter and spring, when it may be seen daily in the harbours and round the coast. It becomes very scarce in summer and autumn." He further states that "a few breed annually in the precipitous cliffs on the southern coast of both Malta and Gozo," but doubtless he here refers to *L. leucophæus*. Captain Rowland M. Sperling, speaking of the Herring-Gull, without distinguishing between the two species, states that it is the "commonest Gull in the Mediterranean. On a moonlight night at Corfu I noticed about fifty Gulls feeding as calmly and unconcernedly as if it had been broad

daylight. I am not aware that it has previously been remarked that they are night-feeding birds." Lord Lilford likewise states that the Herring-Gull is common in the Ionian Islands; and Canon Tristram writes that it is common on the coast of Southern Palestine. It doubtless occurs in the winter season on the coast of Northern Africa, and has been recorded as occurring on the Angola coast; but it is most difficult to define whether the occurrences recorded under the name of *L. argentatus* refer to the present species or to the yellow-legged southern species (*L. leucophæus*). Doubtless, however, the Herring-Gull of the Atlantic islands is the present species; and Mr. F. Du Cane Godman states that it is found on the "Azores, eastern, central, and western groups, Madeira, Canaries. Common everywhere about the sea-coasts and mountain-lakes. Some remain throughout the year, though there are said to be more in summer than in winter. They breed about the coast, and particularly on a small island about a quarter of a mile from the south-west point of Fayal, which in June was quite covered with them."

The Herring-Gull of Eastern North America has been described by Bonaparte as *L. argentatoides*, and by Coues as *L. smithsonianus*, the former being merely a small and the latter a large variety of the present species. Professor Baird gives its range as the "Atlantic coast, from Texas to Newfoundland, western States, Ohio and Mississippi rivers," to which I may add that it is resident and very numerous in the Bay of Fundy, and, Mr. George A. Boardman informs me, numbers breed on the islands, occasionally nesting on trees. Captain Blakiston met with it in the Hudson's Bay territory, and writes that "besides my specimen killed at York Factory, on Hudson's Bay, Mr. Murray also records the Herring-Gull from Severn House, a little further south. Besides these there is a specimen in the Smithsonian Institution from Nelson River; and Mr. Bernard Ross records it from the Mackenzie." Dr. Elliott Coues states that the Common Herring-Gull connects directly with the dark-backed race of Western America (*L. occidentalis*) by the North-Pacific strain. The same may be said as regards the Asiatic Herring-Gull. Judging from the descriptions given by the Siberian travellers, the Herring-Gull of Siberia is *L. occidentalis*; and specimens obtained in China by Mr. Swinhoe, on comparison with examples from North-western America, agree precisely. All the Siberian travellers state that the bird obtained by them has the legs flesh-coloured, and the mantle very dark, thus showing that it is not referable to *Larus leucophæus*. Mr. Meves informs me that the specimens of *L. leucophæus* which he obtained in the Ural did not resemble *L. argentatus* in the colour of the mantle, but on the other hand were nearly as dark as *L. occidentalis*, but they all had yellow legs. The Herring-Gull of Persia and Baluchistan, judging from examples lent to me for examination by Mr. Blanford, is referable to *L. leucophæus*; but Mr. A. O. Hume appears to have obtained both *Larus leucophæus* and *L. occidentalis* on the Mekran coast, the former being the bird to which he refers under the name of *L. argentatus*; for he distinctly speaks of the colour of the legs as being pale lemon-yellow.

With us in Great Britain the Herring-Gull is resident, being by no means uncommon in the winter season. Macgillivray writes that "during the winter it is dispersed along the coasts, chiefly in the inlets and estuaries, where it assembles in vast numbers, when the young herrings are congregated in them. Comparatively few are then seen in the northern parts of Scotland, and scarcely any of the young, which on the other hand are numerous on the southern coasts. On extensive beaches, and especially on such as run out into an angle or point, multitudes may

be seen reposing, often intermingled with Common Gulls, and sometimes with individuals of the two black-backed species. The flight of this Gull is strong and buoyant, direct and unwavering when the bird is proceeding toward a distant place, and then usually elevated, but on ordinary occasions somewhat devious, although from its size this species is not capable of turning and winding so dexterously as the smaller kinds. When engaged with a shoal of fry, the Herring-Gulls hover over the water, now ascending to the height of perhaps twenty feet, then skimming close over the surface; and on observing an object, stretching upward and vibrating their wings and letting down their feet so as to touch and sometimes pat the water, they pick it up without alighting. Sometimes they plunge partly into the water, and occasionally pick up their prey while swimming. All this while they emit now and then a loud and rather shrill cry. Their food consists of fishes of small size, occasionally large dead fish, crabs, echini, asteriæ, and mollusca. In winter and spring they often travel in bands over the fields, searching the pastures, and more especially ploughed land, for worms, grubs, and insects. At that season they may sometimes be seen on lakes, either solitary or in small flocks. They walk, and even run, with ease, and not ungracefully. Often, on the sands, they may be seen rapidly patting the surface with their feet; but the purpose of this action is not understood, although some have supposed it to be the causing of worms to emerge. In frequented parts they are very shy, seldom allowing a person to come within two hundred yards; but where they are little disturbed they are less suspicious, although under any circumstances they keep out of reach of ordinary shot. They repose on beaches and headlands, sometimes standing on one leg, but generally lying down. During very tempestuous weather they fly inland, or betake themselves to some partially sheltered place, near highwater mark, and then lie flat on the ground. On such occasions I have seen them detained several days in one place, apparently without food, the wind being so high that their excursions were but short. They may then be more easily approached; but as their flesh can scarcely be relished as food, they are not much liable to be molested, unless in the neighbourhood of towns."

In the 'Proceedings of the Zoological Society' for 1859, Mr. A. D. Bartlett, the well-known Superintendent of the Zoological Gardens, gives some most interesting notes respecting the habits of the Herring-Gull, which I cannot do better than quote as follows:—"In the beginning of June 1850, a Herring-Gull (*Larus argentatus*) hatched out her young ones in the enclosure (No. 17), which is overshadowed by two weeping ash trees. The male bird had assisted her so constantly in incubation, that his strength gave way, and he died just as the young birds were chipping out of the shell. The female then became restless, left the eggs, and was only induced to resume her place for the few hours which were necessary to complete the hatch by the keeper having arranged the dead body of her mate in counterfeit presentment of the position he generally took up near her when not himself upon the eggs."—*Extract from 'Garden Guide,' 1852.* It will, I hope, be understood that the birds so hatched in 1850 were the parents of the individual whose habits I now wish to record. This bird was one of two hatched about the latter end of May 1857, and was reared by its parents in the gardens, where it remained during the summer and autumn of that year. At the commencement of the winter he was in the habit of flying about (not being pinioned), and occasionally staying away a *day* or *two*, then *for a week or more*, returning again generally about feeding-time, and alighting among the other Gulls and feeding

with them. This continued till the end of March 1858, at which time he disappeared. Nothing more was seen or heard of him until the middle of November 1858, when, to the delight and astonishment of all who knew him, he returned one afternoon at the usual time. Meeting the keeper with the box of food, he followed him to the enclosure where he was hatched, and, settling down among the other Gulls, took his dinner as though he had never been away, not appearing the least shy or wild. Here he remained with his parents and the other Gulls, occasionally flying off for a day or two, until the beginning of February 1859. He again departed and by many was given up for lost; others, however, thought he might again return. And on the morning of Saturday last, between eight and nine o'clock, we were gratified to behold the long-lost Gull making his way to his old quarters much improved in his appearance, having nearly completed his adult plumage. He immediately came down and was greeted by his old friends, who evidently recognized him. He appeared fatigued and hungry. I sent for some food; and he came boldly towards us, and fed almost from the hand. As soon as his appetite was satisfied, he walked about, quite at home among the other Gulls. Since Saturday I have seen him flying now and then over the Gardens and Park, but returning after a short flight."

The Herring-Gull feeds on small shell-fish, marine animals which it picks up along the coast, small fish, fish-fry, &c.; and I have given above an excellent extract from Macgillivray's well-known work respecting the food of this species. On the North-American coast I have observed both this and other species of Gulls feeding on clams, which they carry up to a considerable altitude and drop on the rocks in order to break the shell and get at the animal inside. Mr. Robert Gray has noticed the same habit in the Herring-Gull of Scotland, and writes:—"When driving one day along the shore between Stranraer and the Mull of Galloway, I observed numbers of Herring-Gulls lifting mussels from the beach, and, after carrying them some distance in the air, letting them fall among the stones so as to break the shells and enable them to get at the contents. I had previously seen Rooks at this ingenious employment, but I never before saw or heard of Gulls exercising their instincts in this manner. Mr. Watson, of Stranraer, informs me that he has frequently observed Herring-Gulls breaking mussels in the same way."

Baron A. von Hügel informs me of a peculiar habit of the Herring-Gull, as observed by him, which I think well worthy of record. He states, "on several occasions, whilst shooting wild-fowl in Poole Harbour (Dorset), I have observed the Herring-Gull indulge in a regular mud-bath. Last autumn I watched a whole flock of some twenty or more birds, through a glass, thus engaged. They were on a soft mud-bank, which was barely covered by the receding tide. Their actions reminded one of Sparrows when 'dusting' on some sandy road, so actively did they splash the mud about with their wings. The Gulls continued this for a considerable time, and did not stop before their delicate colouring was quite transformed by the liquid mud. They ended their bath by slightly opening and shaking their wings and then running into the water, where, after ducking and splashing for some time to cleanse themselves from the mud, they returned to the neighbouring dry mud-banks, where, after preening and arranging their feathers, they commenced feeding. I have only noticed this habit in the present species."

The Herring-Gull breeds throughout Northern Europe and North-eastern America, on the coast or on the small islands close to the mainland, its nest being a small depression in the soil, sometimes with but little, if any, lining, whereas at others they build a bulky nest of grass and

herbs of various species. In some localities the nest is placed in flat situations, whereas in others, as in Shetland, it is almost invariably built in cliffs of difficult access. As above stated, it often builds in trees on the American coast, though I cannot find any record of its having been observed nesting thus in Europe. Mr. A. Benzon informs me that on the Danish coasts it "breeds on the small islands, where its eggs are collected by the fishermen, and often form no inconsiderable source of food. Its nest consists of a hole scratched in the ground close to the shore, in which, from the early part to the middle of June, three eggs, measuring from 65 by 45 to 75 by 51 millimetres, are deposited. Judging from a large series, I should consider the average size to be 71 by 49. A peculiarly elongated variety measures 90 by 48; and several unusually small eggs vary from 40 by 30 to 57 by 41 millimetres."

I found it breeding on the flat shores of the small islands off the coast of Finland.

In my collection I have a considerable series of eggs of this Gull, which in size vary from  $2\frac{3}{4}$  by  $1\frac{3}{4}$  to  $3\frac{2}{4}$  by  $2\frac{1}{4}$  inches. In colour they vary from brownish grey to dull olive-brown, marked and spotted with violet-grey underlying shell-blotches and dark brown overlying surface-blotches and spots. I have one almost unspotted pale blue variety; and Mr. Benzon informs me that he has several such abnormal eggs, as also others spotted with brown. In some varieties the markings are very closely diffused over the egg, giving it a very dark appearance. Three is the number of eggs usually deposited.

Mr. C. B. Hodgson sends me the following notes on the breeding of this Gull:—"In the Orkneys it lays its eggs on the grass-covered edges of the higher cliffs, many hundreds breeding together on the Black Craig near to Stromness. At this place the nests were placed very near to each other, and a pair or two of Lesser Black-backs were breeding with them. Whenever I have found the Lesser Black-back breeding—on Suleskerry, on the Orkneys, and on the different islands of the Farn Group—I have always seen a pair or two of Herring-Gulls in company with them, different though the usual nesting-places of these two species are. The eggs of the Herring-Gull, in colour, vary from a moderately light stone to a dark brown of a somewhat yellowish hue; but the average colour is a moderately dark stone-colour. They are blotched with very dark brown, the blotches being rarely large, but of a medium size, and, as a rule, uniformly distributed over the surface of the egg; mingled with the blotches are a few spots. Mr. Hewitson says that the chief characteristic, distinguishing the egg of this bird from that of the Lesser Black-back, is that the blotches are larger. This I have not found to be case; and of the seventy eggs of each species now lying before me, the blotches on those of the Lesser Black-back run larger on the average. Though taken singly, the eggs of the two species cannot be distinguished with any certainty, yet, when a series of each is placed side by side, there appears little difficulty in saying to which bird the eggs belong. Those of the Herring-Gull are more uniform in colour, in shape, and in the markings. They are darker, lack the delicate appearance presented by many of those of the Lesser Black-back, and are not so thickly covered with spots or blotches. In some few instances they bear a close resemblance to the eggs of the common Skua, a resemblance I never saw in any one of the thousands of the eggs of the Lesser Black-back I have examined on the Farn Islands. The greenish tinge in the ground-colour I have found absent in those I took in the Orkneys, whilst it was common in those of the Lesser Black-back I took both on those islands and on the Farn group.

"The eggs of the Herring-Gull are decidedly the larger. In sixty-six eggs the smallest measured in length 2 inches  $6\frac{1}{2}$  lines by 1 inch  $8\frac{1}{2}$  lines in width, and the largest 3 inches by 2 inches  $\frac{1}{2}$  line, whilst the average was 2 inches  $8\frac{1}{2}$  lines by 1 inch  $10\frac{7}{8}$  lines. Taking sixty-eight eggs of the Lesser Black-back, the smallest measured 2 inches 4 lines by 1 inch 9 lines, and the largest 2 inches 11 lines by 1 inch  $11\frac{1}{2}$  lines, giving an average of 2 inches  $7\frac{1}{2}$  lines by 1 inch  $9\frac{5}{8}$  lines."

Mr. Howard Saunders informs me that "during the breeding-season this Gull is a great destroyer of eggs; and the small colony of Gannets at Lundy Island has suffered terribly from the repeated raids made upon their nests. When rounding the north end of the island where the Gannets breed, vessels frequently fire a shot for the sake of seeing the vast clouds of Guillemots, Razor-bills, Puffins, and Kittiwakes which then take wing. Down come the Herring-Gulls, and numerous eggs of the Guillemots become their prey. However, as these are in thousands it does not so much matter; and, again, the sitting Guillemot is not easily disturbed. But the unfortunate Gannets have their nests emptied in a twinkling, the eggs being frequently transfixed and carried off on the Gulls' bills to some neighbouring rock. On one of these I found about a dozen sucked eggs, some of them, in spite of the two holes, might have made fairish cabinet specimens, had they been rare enough to make it worth while keeping them. These Gulls are bold enough in their pursuit of food; and on one occasion a hungry fellow, who was sucking an egg on a ledge above me, positively sent a stream of yolk trickling down on to my hand as I was climbing towards him, gobbling away for dear life as he calculated to an inch the rapidly diminishing distance between us, and never taking wing till the last second, which brought me within arm's reach."

The specimen figured is one in my collection, obtained near Uddevalla, in Sweden. The adult birds in summer plumage described are in the collection of Mr. Howard Saunders; and the winter-plumaged specimen and young bird described are in my collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, *ad.* Leadenhall Market, December. *b*, *juv.* Pagham, September. *c*, ♂. Uddevalla, Sweden, April 1st, 1872 (*Meves*). *d*, ♂. St. Petersburg. *e*, ♂. Rupert House, Hudson's Bay, June 20th, 1860; *f*, ♂ *juv.* Fort Macon, North Carolina, February 1869 (*Dr. Coues*). *g*, ♂ *juv.* Koshkonong Lake, Wisconsin, April 17th, 1871 (*Dr. Brewer*). *h*, *pullus*. Maine, U. S. (*Krider*).

*E Mus. Howard Saunders.*

*a*, ♂, *b*, ♀. Orkneys, summer (*Dunn*). *c*, ♂ *ad.* Borkum, September 7th. *d*, ♂. Havre, January 1st, 1873. *e*, ♀ *juv.* Pagham, September 1869. *f*, ♂. Labrador.

*E Mus. J. H. Gurney, jun.*

*a*, *ad.* North England; *b*, ♂ *juv.* Greatham, Durham, January 21st, 1867 (*J. H. G., jun.*). *c*, ♂ *juv.* St. Leonard's, Sussex, January 1861. *d*, *ad.* (winter plumage). St. Leonard's.



## LARUS LEUCOPHÆUS.

(YELLOW-LEGGED HERRING-GULL.)

*Larus argentatus*, Brünnich, Bp. Iconogr. Fauna Ital. *Uccelli*, Introduzione (1832-41), nec Brünn.

*Laroides argentatus* (Brünnich), Bp. Cat. Met. *Uccelli* Europ. p. 79. no. 509, "universal in Europe, Northern and Eastern Asia" (1842), partim.

*Larus cachinnans*, Pallas, v. der Mühle, Ornith. Griechenl. p. 143. no. 310, "Greece" (1842), nec Pallas; conf. Schlegel, Rev. Crit. p. 113.

*Larus argentatus*, Brünnich, Cara, Ornitol. Sard. p. 172. no. ccxix. "Sardinia" (1842), nec Brünn.

*Glaucus leucophæus* (Lichtenst.), Bruch, J. f. O. 1853, p. 101. no. 18, "Red Sea."

*Glaucus michahellesii*, Bruch, loc. cit. no. 17. "Dalmatia, North Africa" (1853).

*Larus leucophæus*, Lichtenst. Nomencl. Avium Mus. Zool. Berolinensis, p. 99, "Arabia" (1854), sine descr.

*Laroides leucophæus* (Lichtenst.), Bp. Naumannia, 1854, p. 212. no. 24, "Red Sea, Adriatic;" Compt. Rend. xliii. p. 644 (1856); Consp. ii. p. 219. no. 5, "N. and E. Africa, E. Mediterranean" (1857).

*Larus leucophæus*, Lichtenst., Bp. Rev. Mag. Zool. 1855, p. 16.

*Larus michahellesii* (Bruch), Bp. loc. cit. (1855).

*Laroides michahellesii*, Bruch, J. f. O. 1855, p. 282. no. 25.

*Laroides michahellesii*, Bruch, Bp. Compt. Rend. xliii. p. 644 (1856); Consp. ii. p. 219. no. 4, "Adriatic, Dalmatia, E. Mediterranean."

*Larus argentatus*, Gm., Costa, Fauna del. R. di Napoli, *Uccelli*, p. 73. no. 2, "common on Neapolitan coasts" (1857).

*Larus leucophæus*, Licht., Salvadori, Cat. Ucc. Sardegna, p. 129. no. 252, "Sardinia" (1864).

*Larus argentatus*, Brünnich, v. Heuglin, System. Uebersicht, p. 69, "Mediterranean, Nile to Chartum" (1855), nec Brünn.

*Larus argentatus*, Brünnich, Schlegel, Mus. Pays-Bas, *Lari*, p. 17, partim (1863).

*Larus argentatus*, Brünnich, Blasius, J. f. O. 1865, p. 380. no. 25, partim.

*Larus leucophæus*, Lichtenst., Finsch & Hartl. Vögel Ost-Afrik. p. 818. no. 426 (1870).

*Larus cachinnans*, Pall., Meves, Öfv. K. Vetensk. Ak. Förh. 1871, p. 786, "Cholmogory."

*Larus argentatus*, Gm., Hume, 'Lahore to Yarkand,' p. 299. no. 978 bis, "Kashmir" (1873), nec Gm.

*Larus argentatus*, Brünnich, Hume, Str. Feath. i. p. 270. no. 978 bis, "Scinde" (1873), nec Brünn.

(The above by Lord Walden.)

*Figura nulla.*

*Ad. L. argentato* similis, sed pedibus flavis et stragulo saturatè cærulescenti-schistaceo.

*Adult* (Algiers, 20th February, 1873). Resembles *L. argentatus*, but has the mantle darker in colour, and the legs bright gamboge-yellow. Total length 26 inches, culmen 3·1, wing 18·5, tail 7·7, tarsus 2·85.

*Young*. Resembles the young of *L. argentatus* so closely that I am unable to distinguish any character by which they may always be separated.

THIS Gull, though closely allied to *Larus argentatus*, is, I believe, a very clearly distinguishable southern representative of that species, differing, as above stated, in the colour of the back and legs. It inhabits the Mediterranean basin, extending into Northern Africa, and eastward into Persia and Scinde, where it meets another closely allied species, *Larus occidentalis*. In Eastern Europe it occurs far further to the north than I find it recorded in Western Europe; for Mr. Meves met with it on the Dvina, and shot one near Cholmogory; he also writes that he saw two Gulls which were shot near Archangel by Mr. Iversen, and which he believes to be the present species. Mr. Sabanäeff writes that "in European Russia it is met with along the lower course of the Volga as far as Samarska Luka; and, according to Eversmann, it may possibly be found in the Government of Kazan. It is numerous on the coasts of the Caspian, on the islands and lakes, as also along the lower course of the Ural river, and has been met with on the large lakes in the Governments of Orenburg and Perm, on the east side of the Ural range. Here I found it on the lakes in the south-eastern part of the Ekaterinburg district, in the Kaslinsky Zavod. A colony of about a hundred pairs inhabit the Lake of Irtysh, and occupy one entire small rocky island during the breeding-season. The young of the previous year do not breed, but live apart on other islands. They arrive very early, usually about the beginning of April or the end of March, and immediately take possession of their island. The young are fledged about the end of July; as soon as hatched and the down is dry, they run, and next day take to the water. They pass the night on the island where they were hatched, and generally keep to the same lake, seldom visiting any neighbouring sheet of water before they migrate. On the islands of the Caspian they breed by thousands, placing their eggs on the ground, on a little dry grass which they collect together. During the breeding-season the Ural Cossacks visit the islands and collect boat-loads of eggs, which they boil and store away for future consumption."

This species appears to be the only Herring-Gull found in the Mediterranean during the summer season; and the various writers on the ornithology of the countries bordering that sea generally record it as common both then and in the winter. Mr. E. Cavendish Taylor informs me that, according to his experience, "it is extremely common in the eastern parts of the Mediterranean, becoming gradually less abundant as we go westward. In the Bosphorus it swarms, and is a common species all round the coasts of Italy and Sicily." Lindermayer speaks of it as being very common in Greece. According to Doderlein it is abundant along the Sicilian coast, especially in winter, and probably nests in the wilder parts of that island and of Calabria. It is also resident and abundant in Sardinia. Under the name of *L. argentatus* Savi records its occurrence on the coast of Tuscany, and states that it nests in great numbers on the islands of the Mediterranean. Von Nordmann also, speaking of it as *L. argentatus*, states that it is not rare on the Black Sea. It is probable that during the winter *L. argentatus* is nearly as common as *L. leucophæus* in the Mediterranean; but as the two species have so generally been confused, it is difficult to speak with any degree of certainty. Canon Tristram informs me that a

specimen obtained by him in Palestine is referable to *L. argentatus*, as it had flesh-pink (and not yellow) legs.

In Northern Africa the present species is common. Captain Shelley writes that "it is very numerous and resident in Egypt and Nubia. I believe it to have been the species of which I saw flocks occasionally in Nubia, apparently migrating northward in April. Von Heuglin (Syst. Ueb. p. 69) probably refers to this species under the name of *L. argentatus*, which he declares is met with singly along the Nile up to Kartoom." To this I may add that Von Heuglin further states that this species was "seen near Ras Belul; more frequent on the Somali coast and on the Gulf of Aden."

It is found in North-western Africa; and Loche doubtless refers to the present species when he states that *L. argentatus* is abundant along the coasts of Algeria, nesting on the more rugged portions. At Algiers, writes Mr. E. Cavendish Taylor, "where I spent last February (1873), and where I obtained the specimen you have figured and described, I found it, though not very abundant, decidedly more so than *L. fuscus*, which was the only other species of large Gull I saw there. At Oran, about 300 miles west of Algiers, *Larus fuscus*, on the contrary, was very abundant, and *L. leucophæus* comparatively rare. At Gibraltar and Tangier, whither I went from Oran, *L. fuscus* absolutely swarms, whilst I did not observe any Herring-Gulls at all there—though I especially looked out for them, to see whether they would have yellow or flesh-coloured legs; for I imagine that the Straits of Gibraltar is about the point where *L. argentatus* and *L. leucophæus* would probably intermingle."

To the eastward the present species is found to the Mekran coast, in Scinde. Messrs. Dickson and Ross speak of a Herring-Gull as being met with at Erzerum in April; and Mr. Blanford has lent me a series of specimens from Baluchistan, Bushire, and the Mekran coast, which are (so far as can be ascertained, as most of them are in immature plumage) all referable to the present species; and the same may be said respecting the Herring-Gulls obtained by Mr. Hume on the Yarkand expedition, which were in immature plumage, but which were doubtless the young of *L. leucophæus*.

Mr. Henry Seebohm, who has just returned from an ornithological tour in Greece, where, at my request, he paid especial attention to the present species, has favoured me with the following notes, the result of his personal observations made this last spring:—" *Larus leucophæus* is almost the only Gull one meets with in the Mediterranean in spring and summer. I have occasionally seen a stray *Larus melanocephalus* in the Gulf of Smyrna; and in the Bosphorus, especially in the bay between the picturesque villages of Therapia and Buyukdere, I noticed a dark-mantled species (probably *Larus fuscus*). These Gulls were very dark on the wings and back, slate-grey, almost looking black in the evening light. I fancied also that their wings were narrower, more curved, and more pointed than those of *Larus leucophæus*. Both species seemed to be leisurely on the look-out for whatever they could pick up, often swimming on the sea for a short time, in great contrast to the large flocks of 'âmes damnées' (*Puffinus anglorum*)—which were passing and repassing in long strings at a speed of at least forty miles an hour, perhaps much more. In sailing from Naples or Trieste to Constantinople, and from Corinth to Patras and Missolonghi, I have often watched half a dozen or more of *Larus leucophæus* flying in the wake of the steamer, sometimes for days together, no doubt to pick

up any refuse food that may be thrown out of the ship. Their powerful wings enable them to keep up to the eight or ten knots an hour which the vessel is making, with the greatest ease. With a scarcely perceptible stroke of the wing they can glide past at double speed. Probably very few of these birds are breeding. Some of them are in the spotted immature plumage; others, though white on the breast, still have the black bar at the end of the tail, and are more or less mottled on the back and wings.

"In the Golden Horn at Constantinople this Gull is very common amongst the steamers, sailing-vessels, and caïques which crowd the waters between Stamboul and Galata, picking up the refuse floating on the water, in company with the Black Kite. It is very interesting to watch these birds continually hovering over the water, and frequently darting down to the surface—the Kites invariably seizing their prey with their feet, and the Gulls as invariably using their bills for the same purpose. As you sail up the Golden Horn, under the two pontoon bridges, the estuary soon narrows into a river, winding through the 'valley of the sweet waters.' The channel is railed off from the shallow water full of flags and reeds, on each side, by wooden palings. One afternoon (it would be about the third week of June last) I had an hour's row in a caïque up the valley. On returning late in the afternoon, the Gulls were sitting upon these railings by the dozen together. They were so tame that they allowed our caïque to glide past them within a few yards without taking flight. They were almost all young birds in the brown-spotted immature plumage, with grey legs. Perhaps one in twenty was in adult plumage, with yellow legs.

"At Missolonghi I often saw this bird flying over the lagoon. The low, swampy islands which are so numerous in this shallow bay, are the favourite breeding-places of the Gull-billed Tern (*Sterna anglica*), the common Tern (*Sterna fluviatilis*), the Lesser Tern (*Sterna minuta*), the Kentish Plover (*Ægialites cantianus*), and the Pratincole (*Glareola pratincola*). There is also a colony of Pelicans (*Pelecanus crispus*); but no Gulls breed there. They evidently prefer a more secluded and rocky situation. I was told that they were breeding in large numbers on the island of Makree, one of the Echinades, lying a few miles from the coast, opposite the mouth of the Aspropotamo. Hearsay evidence is at best very unreliable in all matters relating to natural history; and little or no value can be attached to any information you may obtain from a Greek. They have an inveterate propensity to tell lies, with or without provocation, and entirely without shame; in fact, if you tell a Greek that he is a liar, he rather takes it as a compliment. Fortunately I made the acquaintance of Dr. Nieder in Missolonghi; and from him I learned that Schrader had many years ago visited the Echinades, and had found traces of Gulls having bred, in considerable numbers, on a rocky island a little to the east of Makree. After a great deal of trouble (for my Greek servant not only dreaded sea-sickness, but was afraid of being drowned, and tried to frighten me with stories of brigands), I succeeded in engaging a boat to take me to this island. We had a fair breeze to start with; but a head wind set in at night, and continued several days; so that it was sixty-six hours after leaving Missolonghi that we landed amongst the Gulls. Some time before we reached the island they seemed to have found out that we were making for their breeding-grounds; and instead of quietly crossing our track, or following in our wake, they flew backwards and forwards and around us, showing by their loud cries that they looked upon us as enemies. We had no difficulty in landing, though the shores of the

island were one mass of jagged rock, and the island itself was covered with rocks, amongst which were growing shrubs of myrtle, a dwarf arbutus, and a large plant, half shrub, with yellow and red leaves, which my German dragoman (who skinned my birds for me, and was also a fair shot) told me was called 'dragon's blood.' A tall white lily, in full bloom, was also a very conspicuous object amongst the marine vegetation. From the great number of birds on the island, I expected to find a rich harvest of eggs after our long and tedious sail; and it was somewhat disappointing to find empty nest after empty nest. The situations and material of which these were made exactly resembled those of *Larus fuscus* and *L. argentatus*, with which I was so familiar on the Farn islands off the coast of Northumberland—mere scrapings together of dry grass in some niche or hollow of the rocks. At first we came to the conclusion that the nests had been robbed by some hungry fisherman; but by-and-by we came upon some nests with broken egg-shells lying near them, as if the young birds had hatched and gone, and we were obliged to admit that we were too late in the season. One end of the island was much higher and more precipitous than the other; and here the birds made such a clamour, that our hopes of getting eggs were again raised. After a careful search we succeeded in finding five young birds in down, and six eggs. Of the latter two were rotten, and the other four just on the point of hatching. In colour they were like the usual variety of the eggs of *Larus argentatus* or *L. fuscus*, and our half dozen were sufficient to show that they were as variable in size. Later on I noticed a pair of Gulls anxiously flying about over some loose rocks close by the shore, and after some little search found a young bird which must have been three weeks old. This was on the 1st day of June (European style); so that it is evident that these birds must have eggs about the middle of April. On the Farn Islands I have taken fresh eggs of *Larus fuscus* and *L. argentatus*, as well as of *Sterna fluviatilis*, from the 1st to the 20th of June. At Missolonghi the eggs of *Sterna fluviatilis*, which we took during the last week of May, were most of them perfectly fresh; and I was surprised to find *Larus leucophæus* an earlier breeder in this locality by at least a month. In returning home we landed on Oxa, another of the Echinades, and were told that the season for Gulls' eggs was early in April, which, allowing for the twelve days difference in Greek time, would agree exactly with our observations; so that in this instance our information, though Greek, appeared to be correct. The greater number of the birds appeared to be on the sea, between Makree and the island where they breed, probably with their young, who, we concluded, could then scarcely fly, as we never saw any on the wing. A great many of the mature birds, however, were continually flying over the part of the island where we happened to be, protesting by their loud cries against our invasion of their home. The call-note of *Larus leucophæus* very closely resembles the laugh of our Gulls—a sort of *hă-hă-hă*, or more exactly *hăn-hăn-hăn*, the *n* being scarcely sounded, or nasally pronounced as in French. When alarmed, their note most nearly resembles the sound of the word *kyeok* pronounced gutturally as by a native Irishman. When unusually excited, this note is rapidly repeated, and sounds like *kăk-ăk-ăk*. They are somewhat wary birds; and it was some time before we succeeded in shooting as many as we wanted for skins. Out of five adult birds three proved to be males, and two females. One of them had swallowed an eel, half of which was protruding from its mouth when shot. The contents of the stomachs of the other birds were principally grasshoppers. There seems to be little or no difference in the plumage of

the sexes; but the females had decidedly the smaller bills. On our return to Missolonghi a fisherman brought us a young bird of this species, which we judged to be about five weeks old.

"The colour of the legs of the young in the nest, and of the three-weeks-old bird, was dark ash-grey. The five-weeks-old bird had paler-coloured legs; and in all the adult birds the colour of the legs was straw-yellow. In all cases the nails at the ends of the toes were dark grey, approaching black. In the young the pupil of the eye was blue, and the iris coffee-brown; the older young birds had the pupil darker; in the adult birds the pupil was still darker, say blue-black, and the iris very pale straw-colour, almost light grey. In all the young birds the corners of the mouth were flesh-coloured; and in the adult, orange. The rim round the eye was flesh-coloured in the young, and dark orange, almost vermilion, in the adult. The bills of the young were darker and bluer than their legs; they might be described as lead-coloured, becoming pale horn-colour at the tip. In the adult the bill was straw-yellow, with a dark orange (almost vermilion) spot at the angle of the lower mandible, in some cases extending slightly on to the edge of the upper mandible. *Larus leucophæus* is very nearly allied to our *argentatus*, but, besides the difference in the colour of the legs, in the adult summer plumage straw-yellow against flesh-coloured, I am convinced, from the examination of a series of skins of each laid side by side, that *L. leucophæus* has longer secondary quill-feathers than *L. argentatus* when measured from the tips of the scapulars."

I have eggs of the present species from the Southern Ural, collected by Mr. Sabanäeff, and have had for examination those taken by Mr. Seebohm above referred to, and cannot find any distinctive difference between them and those of *L. argentatus*; and they vary greatly *inter se*.

The specimen figured on the foreground of the Plate (*L. argentatus* being on the left in the background) is in the collection of Mr. E. Cavendish Taylor, and was obtained by him at Algiers, this being also the specimen described. -

In the preparation of the above article I have examined the following specimens:—

*E. Mus. E. Cavendish Taylor.*

*a.* Algiers, February 20th, 1873 (*E. C. T.*).

*E Mus. Ind. Calc.*

*a, b, ♂*. Gwadar, Baluchistan, December 1871. *c, ♀*. Gwadar, January 14th, 1872. *d, e, ♂ juv., f, g, h, i, ♀ juv.* Gwadar, December 1871, and January 1872. *k, ♂, l, ♀*. Mekran coast, Baluchistan, November 1871 (*W. T. Blanford*). *m, ♂*, Bushire, January 1871 (*Major St. John*).

*E Mus. Howard Saunders.*

*a.* Capri, January 1872. *b.* Genoa. *c.* Valencia, Spain (*H. S.*). *d.* Volga (*Möschler*).

*E Mus. H. Seebohm.*

*a, b, c, ♂ ad., d, e, ♀ ad., f, g, juv., h, i, j, k, l, pulli.* Echinades, near Missolonghi, Greece, June 2nd, 1873 (*H. S.*).

## LARUS AFFINIS.

(SIBERIAN HERRING-GULL.)

*Larus affinis*, Reinhardt, Vidensk. Meddel. 1853, p. 78.*Larus argentatus*, Midd. Sib. Reise, ii. p. 242 (1853, partim).*Larus cachinnans*, Licht. Nomencl. Av. p. 99 (1854, nec Pall.).*Larus fuscus*, Jerdon, B. of India, ii. p. 830 (1864, nec Linn.).*Larus cachinnans*, Meves, Öfv. K. Vet. Ak. Förh. 1871, p. 786 (nec Pall.).*Larus occidentalis*, Hume, Stray Feathers, 1873, p. 273 (nec Audubon).*Larus heuglini*, Bree, B. of Eur. 2nd ed. v. p. 58 (1876).*Figura unica.*

Brandt, Desc. et Icon. Animal. Ross. Nov. Aves, fasc. ii. pl. iv. fig. 4.

♂ *ad.* *Laro fusco* similis, sed corpore suprâ conspicuè pallidiore: remigibus nigris, in pogonio interno conspicuè schistaceo marginatis, remige extimo versus apicem albo notato, reliquis vix albo apicatis, et secundariis intimis latè albo terminatis: capite, collo, caudâ et corpore subtus albis: rostro flavo, mandibulâ versus apicem rubro notatâ: pedibus flavis: marginibus palpebrarum saturatè aurantiacis.

♀ *ad.* mari similis.

*Juv.* *Laro fusco* similis sed pallidiùs coloratus.

*Adult Male* (Yooshina, Petchora, 25th June, 1875). Resembles *Larus fuscus*, but has the mantle much lighter, being dark dull slate-blue; quills black with a distinct dark slate pattern on the inner web, the first quill with a white spot near the tip, several of the others slightly tipped with white; inner secondaries broadly tipped with white; head, neck, tail, and underparts white; bill yellow, with a spot of red towards the tip of the lower mandible; legs and feet yellow; ring round the eye deep orange. Total length about 20 inches, culmen 2·75, wing 17·4, tail 7·0, tarsus 2·8.

*Young Female* (Yennesei). Resembles the young of *Larus fuscus*, but is rather paler and more marked.

THE Siberian Herring-Gull ranges from Northern Europe, right across Asia, to Alaska in North-western America, and in the winter season ranges south to Northern India. Reinhardt received an example from Greenland; but, so far as I can ascertain, it has not been recorded from Scandinavia, or anywhere between Greenland and Northern Russia. Von Middendorff procured it during the breeding-season on Bear Island, south of Solovetsk, in the White Sea; and Messrs. Seeböhm and Harvie-Brown, who procured it on the Petchora River, write (*Ibis*, 1876, p. 452):—"The Siberian Herring-Gull arrived on migration at Ust Zylma about the 11th May. It breeds

on the shores of the delta and the lagoons of the Petchora. We obtained several of its eggs, which do not differ from those of the other European Herring-Gulls. Nearly all the birds which frequent the Petchora were in adult plumage. We shot two birds in mature plumage, and may have seen a couple more. Wherever a party of fishermen was stationed, there were sure to be plenty of Herring-Gulls. They hovered over the nets as they were being dragged in, and frequently secured small fish as they attempted to escape." Mr. Meves obtained this bird at Cholmogory; and it doubtless occurs elsewhere in Northern Russia in Europe. Doubtless this is also the Gull referred to by Von Heuglin (Ibis, 1872, p. 65) as having been observed in Yugorsky Strait, Novaya Zemlya, and on Waigats. Messrs. Finsch and Brehm obtained it on the Ob; and Mr. Seebohm met with it on the Yenesei, in Northern Siberia. "During the breaking-up of the ice," this gentleman says (Ibis, 1879, p. 162), "the wild cries of these birds were an appropriate accompaniment to the grand crash which shipwrecked us in the Koo-ray'-i-ka. As the ice broke up further north these Gulls left us, and we saw them no more until we reached lat. 69°. Here a large colony frequented an island in the river, where several parties of Russians and Ostyaks were fishing. This colony was almost entirely composed of birds in immature plumage; and there was nothing to lead us to suppose that any of them were breeding. Between lat. 70½° and 71½° we passed several breeding-stations of these birds, where it was a very rare thing to see a Gull in immature plumage. I should have been too late to secure fresh eggs of this species; but fortunately I had chartered a Russian off Brek'-off-sky and a Samoyede at Gol-cheek'-a to collect for me, and at each station I found a large basket of unblown eggs. As might have been expected, they vary somewhat in size and colour, and are not distinguishable from eggs of *Larus fuscus* and *Larus argentatus*. So far as it is possible to compare the cries of birds from memory, I may confidently affirm that these do not vary from those of *Larus argentatus* or *Larus cachinnans*."

Mr. Seebohm has examined specimens of this Gull obtained by Von Middendorff on the Boganida and Taimyr, near the North-east Cape. Kittlitz obtained it in Kamtchatka; and it occurs on passage in spring and autumn in the Caspian and the sea of Ochotsk.

It is also said to be not uncommon at St. Michael's, in Alaska; but I agree with Mr. Seebohm that until we have evidence that it breeds in America, it can only be reckoned as an occasional visitant there.

In habits this Gull is said to agree closely with *Larus argentatus* and the Mediterranean Herring-Gull; and I have no data respecting its nidification beyond what I give above.

I may here remark that Mr. Saunders considers that the Mediterranean Herring-Gull is the *Larus cachinnans* of Pallas (Zoogr. Rosso-As. ii. p. 318, 1811), and that it should stand under that name instead of *Larus leucophæus*; but neither Lord Tweeddale (who worked out the synonymy for me) nor I could make Pallas's description quite agree with that bird, and we therefore decided to use the specific title of *leucophæus* instead of *cachinnans*. At the same time I must add that, as Pallas states that his *Larus cachinnans* breeds on the Caspian, it is not improbable that he may refer to the Mediterranean Herring-Gull.

Brandt (*l. c.*) figured the Siberian Herring-Gull under the name of *Larus borealis*; but I cannot find that any letterpress or description was issued with the plate; so that this name

cannot be used—which is unfortunate, as it would have been perhaps the most appropriate for this northern Gull.

I have not deemed it necessary to figure this Gull, as it differs from *Larus leucophæus* and *Larus fuscus* merely in shade of colour and in the peculiar slate-coloured margins to the quills.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Yooshina, Petchora, June 25th, 1875 (*Seebohm & Harvie-Brown*). *b*, ♂ *ad.* Yennesei, June 5th, 1877 (*H. Seebohm*).

*E Mus. H. Seebohm.*

*a*, ♂ *ad.*, *b*, ♀ *ad.* Petchora, June 1875 (*Seebohm & Harvie-Brown*). *c*, ♂ *ad.* Yennesei, June 5th, 1877. *d*, ♀ *juv.* Yennesei, July 29th, 1877. *e*, ♀ *juv.* Yennesei, August 3rd, 1877 (*H. Seebohm*).







LESSER BLACK-BACKED GULL.  
LARUS FUSCUS.

## LARUS FUSCUS.

(LESSER BLACK-BACKED GULL.)

*Le Goiland gris*, Briss. Orn. vi. p. 162 (1760).*Larus fuscus*, Linn. Syst. Nat. i. p. 225 (1766).*Larus flavipes*, Meyer, Taschenb. deutsch. Vogelk. ii. p. 469, frontisp. (1810).*Larus cinereus*, Leach, Syst. Cat. Mamm. &c. Brit. Mus. p. 401 (1816).*Leucus fuscus*, Kaup, Natürl. Syst. p. 86 (1829).*Laroides melanotos*, Brehm, Vög. Deutschl. p. 747 (1831).*Laroides harengorum*, Brehm, tom. cit. p. 748 (1831).*Laroides fuscus*, Brehm, tom. cit. p. 749 (1831).*Dominicanus fuscus*, Bruch, J. f. O. 1853, p. 100.*Clupeilarus fuscus*, Bonap. Consp. Av. ii. p. 220 (1857).

*Goéland à pieds jaunes*, French; *Heringsmöwe*, German; *kleine Mantelmeeuw*, Dutch; *Alcatraz*, Portuguese; *Zafferano mezzo moro*, Italian; *Sildemaage*, *Strandmåge*, Danish; *Likka* (adult), *Skuri*, *Likkaskuri* (young), Færoese (*Benzon*); *Sildemaage*, Norwegian; *Sillmåse*, Swedish; *Syeldielow*, Russian; *Merva zoltonoga*, Polish.

*Figuræ notabiles.*

Buff. Pl. Enl. ix. pl. 990; Naum. Vög. Deutschl. x. taf. 267; Gould, B. Eur. v. pl. 431; Kjærb. Orn. Dan. xlii. fig. 2; Schl. Vog. Nederl. pls. 345, 346; Fritsch, Vög. Eur. tab. 56. fig. 7.

*Ad.* pileo colloque undique et corpore subtùs toto albis: dorso toto alisque cinereo-nigricantibus, vix brunnescente lavatis: primariis nigris, his angustè, secundariis latiùs albo terminatis, primario primo subterminaliter albo maculato: uropygio cum supracaudalibus caudâque purè albis: subalaribus albis, imis cineraceo lavatis.

*Juv.* cinerascanti-brunneus, saturatiore brunneo notatus: secundariis intimis albo apicaliter marginatis: pileo colloque undique albis, plumis medialiter brunneis, quasi striatis: subtùs albus, hypochondriis et subcaudalibus cinerascanti-brunneo notatis: subalaribus brunneis, albo notatis et irregulariter transfasciatis: primariis brunneis, haud albo notatis: caudâ apicaliter brunneâ, basaliter albâ brunneo notatâ.

*Adult Male* (Öland, May 29th, 1869). Head, neck, tail, and entire underparts pure white; back and wings black, the former faintly washed with slate; first primary with a white bar near the tip, the remaining primaries being narrowly tipped with white; secondaries broadly tipped with white, and becoming greyish towards the white tip; edge of the wing white; bill light yellow, the under mandible with a bright-red patch towards the tip; iris straw-colour; the edge of the eyelids rich vermilion-red; legs and feet yellow. Total length 21·5 inches, culmen 2·4, wing 15·7, tail 6·0, tarsus 2·1.

*Female.* Similar to the male.

*Winter plumage.* Differs from the summer plumage in having the feathers on the head and neck with a central line or drop of dark brown.

*Young Female* (Baluchistan, January 11th, 1872). Head and neck white, the feathers with a central dark brown line, and a large spot of the same colour towards the tip; back very dark blue-grey; rump white; tail marbled at the base, then black, and finally narrowly tipped with white; primaries black, the inner ones narrowly tipped with white; secondaries blackish brown on the outer web, marbled grey on the inner web, margined and tipped with white; wing-coverts dirty greyish brown, edged with dirty white, here and there having a dark centre; edge of the wing white, here and there marked with dirty brown; underparts pure white.

*Young of the year.* Head and neck dirty white, each feather with a dull brown centre; back and wing-coverts dull brown, edged with dirty white, lighter on the rump; upper tail-coverts white, with thick bars of dull brown; central tail-feathers marbled at the base, then dull dark brown, and finally tipped with dirty white; outside tail-feathers white, barred with dark brown at the base, dark brown towards the tip, and, like the central ones, finally tipped with white; quills dark blackish brown; underparts dirty white, marked, chiefly on the neck and flanks, with dirty light-brown spots; under wing-coverts and axillaries smoky brown, the latter indistinctly marbled with dull grey; under tail-coverts dirty white, with a dark brown spot towards the tip, and here and there a brown bar; bill blackish; legs and feet dull flesh-coloured.

THE present species is found throughout Northern Europe in the summer; and in the winter season it straggles down into Northern Africa. To the eastward its range extends into China and Dauria, and to the westward as far as the Canaries. On the coasts of Great Britain it is a common species, though more numerous in the northern than in the southern part of the island. It breeds on the coasts of Scotland, but also on the inland lakes, and is there commoner than in England. Mr. Robert Grey, writing on the birds of the west of Scotland, states that "in inland situations particularly, this beautiful Sea-Gull is, next to the Black-headed Gull, the best-known species. During the autumn months it betakes itself at nightfall, especially in broken weather, to grass parks at some distance from the coast, remaining in companies numbering sometimes as many as a hundred birds till daybreak, when they wing their flight back to the sea-shore. About the same season of the year it follows the course of large rivers, and travels twenty or even thirty miles inland in small flocks, picking up morsels of food which it finds floating on the stream. I have seen numbers of these splendid birds every year on the Clyde, in the heart of the city of Glasgow, circling in their beautiful flight above the river between the bridges, and also in the most bustling part of the harbour crowded with ships and steam-vessels. Undisturbed by the noise and busy tumult surrounding their haunts, these Gulls soared gracefully over the shipping, descending at times to the water as they found a clear space, and tapping the surface with their feet for an instant, as if afraid to touch the polluted river. After picking up a bit of floating garbage which had attracted their attention, they rose at once to the same height, performing their evolutions as before. In the Outer Hebrides this Gull is very common, and breeds on many of the islands there. In autumn there is a considerable accession to its numbers by arrivals from St. Kilda and other outlying stations. It also abounds on some of the inner group of islands, and on Ailsa Craig, where it makes itself obnoxious to the other birds by destroying immense quantities of their eggs. I have picked up great numbers of Guillemot's and Razor-

bill's eggs at the foot of the cliffs, with holes pierced in the side and wholly emptied of their contents. Some of these were so little injured as to serve for tolerably fair cabinet specimens when laid out with the hole downwards."

Thompson likewise records this Gull as being found around the Irish coast, at inland lakes, &c.; and he says that it is a resident. It has not been recorded from Iceland, but is found in the Færoes, where, according to Captain H. W. Feilden, it "arrives in the beginning of April, and leaves in September. It is very abundant throughout the islands, nesting on the ground in the vicinity of lakes, and also on the fells; its eggs are much sought after by the inhabitants. Herr Müller informs me that it is the only one of the Gulls he has seen feeding at midnight. In 1869 he first observed this bird on the 14th of April, in 1870 on the 18th of April, and in 1872 on the 6th of April. This bird is a robber of eggs; and the Whimbrel and Oystercatcher wage war against it whenever it approaches the vicinity of their nests." In Scandinavia it is tolerably numerous, as high up as the Varangerfiord; and Sommerfeldt writes that it breeds at Vardö. According to Mr. R. Collett, "it breeds commonly along the west and north coasts of Norway, as far as the Russian frontier, being often found in company with *Larus marinus*. Outside Lindesnæs it is generally seen during migration only, when it penetrates up the fiords and the mouths of the rivers." In Sweden, according to Nilsson, it is "very rare in Dalecarlia, but more numerous in Ostergöthland, where it has been observed on Lake Glan. On Gottland it is common, but rare at Upsala; on the coast of Bohus it is less common than the Herring-Gull." Dr. C. R. Sundström also writes that it is "common on all parts of the coasts of Sweden, and more numerous than *L. marinus* on the large inland lakes. It is, however, most numerous on the outer fringe of the coast islands, though it often breeds close to the mainland. Usually it is not a shy bird; for being, compared with *L. marinus*, a harmless bird, not destroying the eggs or young of other birds, it is seldom molested. It generally feeds on small herrings or sprats. The young birds of this species, like those of the Greater Black-backed Gull, late in July, when full-grown, but unable to fly, are knocked down by the peasants and eaten; and the reason why the sea-birds common to Sweden and Åland are more numerous on the latter island is because they enjoy more protection there, and the eggs and young are taken with more care and discrimination; besides, the old sea-birds, especially the ducks, are seldom shot." Meves met with it on the coast of Öland, where it probably breeds; and thence it extends across into Russia, where Meves met with it near St. Petersburg, and as high up as Archangel. Mr. Sabanäeff writes to us that he has only twice observed this species (early in April 1872) near Moscow. Bogdanoff obtained it near Kazan; and it is a common species on Lake Onega. We are informed by Mr. Taczanowski that it is "one of the commonest species in Poland during migration; but they appear at various seasons; generally, however, they are to be seen passing during bad weather in the spring and summer. Whenever the Vistula overflows, they follow the course of the river upwards. A few appear singly during midwinter." It does not breed on the northern coasts of Germany; but, according to Borggreve, it is common there at all times of the year, except the breeding-season; nor does it breed in Denmark, where, our friend Mr. A. Benzon informs us, it is found here and there on the islands during the winter, but appears most commonly on the west coast of Jutland, where it bears the local name of *Marokkos*. Baron von Droste-Hülshoff states that it generally occurs on the Friesland coast in winter. In 1864, 1866,

and 1868, a few were procured on Borkum in the summer season; and on the coast of South Holland he has often observed it during the summer. According to Baron De Selys Longchamps, it is common on the Belgian coasts in autumn. M. Hollandre has only observed one example on the Moselle. Degland and Gerbe write that it visits the sea-coasts of France, and occurs on the coast of Dunquerque in May, August, October, and November, and even breeds in the south of France, where, however, it is recorded by Jaubert and Barthélemy-Lapommeraye merely as observed during the winter months. Professor Barboza du Bocage includes it in his list of the Birds of Portugal; and it is likewise found on the coast of Spain. Major Irby writes to us that it "occurs in the Straits and around Gibraltar in winter in great abundance, leaving for the north in the middle of April; but some immature birds remain there throughout the summer." It probably occurs during the winter season all along the Mediterranean coast, though nowhere common. On the coast of Savoy its appearances are, according to Bailly, very irregular, and it is only seen in the autumn or winter. Count Salvadori records it from Sardinia, and writes that there are two young birds in the Museum at Cagliari; and, according to Cara, it is not rare in the autumn. Mr. C. A. Wright states that in Malta it is "rather rare. Mr. W. C. P. Medlycott shot one in the winter of 1858. I saw several at different times in the winter of 1859-60, and in May 1861 and 1862. In May 1863 two fine examples appeared daily for upwards of a week in the Marsamuscetto Harbour, in company with several Herring-Gulls; and one of them was shot by Lieut. Sperling, R.N., of H.M.S. 'Icarus.'" Lord Lilford met with it in the Ionian Islands, where it occurs occasionally in immature dress, but is very rare in adult plumage. Lindermayer refers to it as one of the rarest Gulls that visit Greece, but he considers that it breeds in the lagoons of the northern part of that country. As regards its occurrence in South-eastern Germany, Baron von Tschusi-Schmidhofen writes that "it often occurs in Bohemia, but always singly. In Upper Austria it has been often killed in severe winters; and in the Vienna Museum there are specimens from many parts of the Empire. In Siebenbürgen it is occasionally to be observed on the large rivers." Messrs. Elwes and Buckley saw it several times on the Black Sea, where, however, it is, they state, not very numerous; but, according to Von Nordmann, it is common in Southern Russia, where it abounds in the interior, frequenting the slaughter-houses, and, together with *Larus canus* and dogs, feeding on the refuse.

It visits Asia Minor in the winter; and Canon Tristram met with it numerous on the coast of Palestine at that season of the year, and also saw it on the Lake of Galilee. In North-east Africa, according to Captain Shelley, "this Gull ranges up the Nile into Nubia, where I frequently saw it in small flocks, generally towards sunset, passing northward in April. On the 24th of that month, near Erment, I shot a specimen out of a small flock, apparently the same that I had seen on several consecutive evenings during our return journey down the river." Finsch and Hartlaub say that it "appears to be sedentary in the south, and is found in all the Nile country, especially in Egypt, extending to the Blue and White Nile." Von Heuglin observed it throughout the year on the Red Sea, and sedentary in the Gulf of Aden; and Dr. A. Leith Adams observed it on the Nile, near the Second Cataract, where, however, it was by no means as frequent as in the upper country. Along the entire coast of Northern Africa this Gull may be met with in the winter season; and according to Canon Tristram it is numerous in the harbours during windy or stormy weather. Mr. F. DuCane Godman includes it in his list of the birds of Madeira and the

Canaries, and states that he "saw pairs of this bird in May in Teneriffe, and in June in Madeira," this being, we believe, the limit of its range to the south-west. To the eastward, however, it extends far into Asia. Mr. W. T. Blanford has sent us for examination an immature bird of this species obtained by him in Persia. Dr. Jerdon obtained one far inland, near Jaulna, in the Deccan; and Messrs. Dybowski and Parvex record it as observed during migration at Darasun, in Dauria. Mr. Swinhoe also, writing on the birds of China, records it as "a common winter Gull on the South-China coast." The Lesser Black-backed Gull has been said to have occurred in America; but our friend Dr. Elliott Coues doubts the authenticity of these statements, and in reply to an inquiry on the subject writes that "this species has been attributed to North America by several writers. Nuttall, for instance, says 'Middle and Northern States to Jamaica'! (Man. Orn. 1st ed. ii. p. 302). Peabody has it in his Report on the Birds of Massachusetts; and Linsley in his list of Connecticut birds (Am. Journ. Sci. xlv. 1843, p. 271). But I have no faith whatever in any of these citations, believing them to be either the result of an entire misapprehension, or else to rest upon some small *L. marinus*, or dark-coloured *L. argentatus*. Nobody has heard of *L. fuscus* in this country for the last thirty years; and I must decline to reconcile this fact with these early citations, by assuming any recent change in the bird's distribution. I would emphatically repeat what I have already said (Pr. Essex Inst. v. 1868, p. 307), 'There is no good evidence of the occurrence of this European species on our coasts.'"

In its habits the Lesser Black-backed Gull much resembles its near ally *L. marinus*, but it is a lighter and more active-looking bird. Macgillivray, an excellent observer of the habits of birds, says that "the flight of this bird is peculiarly elegant, resembling, however, that of the Greater Black-backed Gull, but more easy and buoyant, with the wings considerably curved. Its ordinary cry is loud, mellow, and somewhat plaintive, and, when a number join in emitting it, which they sometimes do when assembled for repose on an unfrequented beach or island, may be heard at a great distance; and it is then far from being unpleasant. It also emits occasionally a cackling or laughing cry, more mellow than that of the species above named. It searches for food on the open sea, in estuaries, on the beaches, and frequently on the land, sometimes flying to a great distance from the coast. Small fishes, crustacea, echini, shell-fish, land-mollusca, and earth-worms are its habitual food; but it also eats of stranded fishes, and devours young birds. When shoals of young herrings are in the bays, creeks, or estuaries, it may often be seen in great numbers, intermingled with other Gulls; but when reposing, whether on the sea or on land, it generally keeps separate in small flocks. In winter few individuals remain in the most northern parts, the greater number advancing southward. They are usually not uncommon at that season in the Firths of Tay, Forth, and Clyde, where very few, however, remain to breed. On the other hand, they are represented as numerous at all seasons on the coasts of Northumberland, the south-eastern and southern counties of England, and along the western coast. It is remarkable how much the habits of a species may vary. This, for example, is represented in some districts as breeding chiefly in marshy plains, or on islands in lakes, in others exclusively on maritime cliffs. Although I have robbed many Gull's nests, I have never been attacked, or even menaced, by any of the larger species. Other individuals, however, have experienced a different treatment. Thus Mr. Hewitson relates of the present species, 'after they have begun to sit, they become very bold in the defence of their eggs. Whilst amongst them I was amused with one, near the nest of which

I was sitting: it retired to a certain distance to give full force to its attack, and then made a stoop at my head, coming within two or three yards of me; this it continued to do incessantly till I left it. Mr. Darling, the keeper of the lighthouse on the island, informs me that an old woman, who was in the habit of gathering their eggs, had her bonnet almost torn to pieces, it being perforated through by their bills."

The Lesser Black-backed Gull is, as will be seen above, found during the breeding-season in the north of Europe; and we do not at present know of any authentic instance of its having been found breeding further south than the English Channel. MM. Degland and Gerbe certainly state that it breeds in the southern provinces of France; but we think that this is open to doubt. The nest, which is tolerably large and bulky, is constructed of grasses or other herbage; and, according to Mr. Robert Gray, who has repeatedly visited their breeding-haunts in Scotland, "the nests there are almost invariably placed in thick bushes of heather, although an occasional one is found in a tuft of rushes or coarse herbage; the structure is somewhat bulky, and is formed of grass and mosses." The eggs vary greatly both in colour and in shape. In ground-colour they vary from light greenish blue to light olive-brown, a medium tint being most usual; the underlying markings are violet-grey, and the shell-spots dark brown, often forming a ring round the larger end. The normal shape is oval; but they are sometimes as pointed as a Whimbrel's egg, and one egg Mr. Benzon possesses is pointed at both ends. Mr. Benzon writes to us that they vary in size from 63 by 45 to 73 by 55 millimetres.

The specimens figured and described are in Dresser's collection, excepting the young female, which has been kindly lent to us by Mr. W. T. Blanford.

In the preparation of the above article we have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀. Öland, Sweden, May 29th, 1869. *c*. Norway (*Collett*). *d*. St. Petersburg (*Dode*). *e*. Gibraltar, April 19th, 1872 (*L. H. Irby*). *f*, juv. Pagham, Sussex (*R. B. S.*).

*E Mus. Howard Saunders.*

*a*, ♂ *ad.* Orkneys, May (*Dunn*). *b*, juv. Belgian coast. *c*, ♂. Valencia, Spain, March 14th. *d*, ♂. Malaga, April 20th. *e*, juv. Malaga, January 30th. *f*, ♂. Tangiers, December. *g*, ♀. Egypt (*G. E. Shelley*).

*E Mus. J. H. Gurney, jun.*

*a*, ♀. Bamborough, April 24th, 1866 (*J. H. G.*). *b*, juv. Greatham, July 11th, 1868. *c*, juv. Ailsa Craig, October 5th, 1867.

*E Mus. Lord Lilford.*

*a*, *b*, ♂, *c*, *d*, ♀. Gibraltar, March 1870 (*L. H. Irby*).

*E Mus. H. B. Tristram.*

*a*. Tiberias, Palestine, April 28th, 1864 (*H. B. T.*). *b*, ♂. Boula, Nile, March 15th, 1858 (*H. B. T.*). *c*, ♀ juv. Beirut, November 20th, 1863 (*H. B. T.*). *d*, juv. Pegwell Bay, 1866 (*J. H. Gurney, jun.*).

*E Mus. Ind. Calc.*

*a*, ♀. Baluchistan, January 11th, 1872 (*W. T. Blanford*).





GREATER BLACK-BACKED GULL.  
LARUS MARINUS.

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## LARUS MARINUS.

(GREATER BLACK-BACKED GULL.)

*Larus marinus*, Linn. Syst. Nat. i. p. 225. no. 6 (1766).*Larus naevius*, Linn. tom. cit. p. 225. no. 5 (1766).*Le Goéland à manteau noir*, Buffon, Hist. Nat. Ois. viii. p. 405.*Le Goéland varié*, Buffon, tom. cit. p. 413.*Larus albus*, P. L. S. Müller, Natursyst. Suppl. p. 108. no. 2 (1776).*Larus maculatus*, Bodd. Tabl. Pl. Enl. p. 16 (1783).*Larus marinus* (L.), Kaup, Entw.-Gesch. eur. Thierw. p. 86 (1829).*Larus maximus*, Brehm, Vög. Deutschl. p. 728 (1831).*Larus mulleri*, Brehm, op. cit. p. 729 (1831).*Larus fabricii*, Brehm, op. cit. p. 730 (1831).*Dominicanus marinus* (L.), Bruch, Cab. Journ. p. 100 (1853).

*Cobb*, Carrion-Gull, *Farspach*, English; *Goéland à manteau noir*, French; *Mantel-Möwe*, German; *Svartbag*, *Sort*, *Havemaage*, *Gaasemaage*, *Aalemaage*, Danish; *Hafstrut*, Swedish; *Havmaage*, Norwegian; *Svartbeákur*, Færoese; *Veidibjalla*, *Kaflabringr*, Icelandic; *Naijardluk*, Greenlandic.

*Figuræ notabiles.*

Albin, Nat. Hist. Birds, iii. 94; D'Aubenton, Pl. Enl. 266; Audubon, Birds Amer. 450; Gould, Birds Eur. 430; Naum. Vög. Deutschl. 268, 269.

♂ *æst.* albus, dorso et alis plumbeo-nigris: primariis nigerrimis, omnibus albo terminatis, primario secundo versùs apicem albo transfasciato, internis pogonio interno plumbeo lavatis, fasciâ subapicali nigrâ: secundariis ferè omnibus et scapularibus longissimis albo terminatis: alulâ spuriâ et campterio alari et tectricibus omnibus subalaribus albis: rostro lætè flavo, mandibulâ maculâ subapicali sanguineâ: pedibus griseo-carneis: iride griseâ corylinâ.

*Av. annot. ad.* similis sed grisescentior, capite fusco striato, et caudâ versùs apicem fusco variegatâ.

*Juv.* albus, capite superiore et collo, dorso, tectricibus alarum minoribus et scapularibus fusco variegatis: uropygio albicantior: remigibus quinque externis nigris, sexto albo angustè terminato, reliquis albo variegatis, tectricibus alarum majoribus albo striatè terminatis, subalaribus et axillaribus albo fuscoque variis: caudâ albâ, maculâ irregulari fusco-nigrâ subterminali maculisque ejusdem coloris variegatâ: subtùs albus, abdomine pallidè fusco variegato: rostro flavo, versùs apicem fulvescente.

*Ptil. hiem.* similis æstivali, sed capite summo indistinctè pallidè fusco striato.

*Fem.* mari similis, sed minor, rostro minore.

*Adult Male in summer* (Uddevalla, Sweden, 6th April). Head, neck, tail, and entire underparts pure white; entire mantle black, with a tinge of dark slate; primaries black, washed with slate on the inner web,

the first and second with a broad white tip, the second having a black band across the white, the third narrowly tipped with white; inner primaries slate-grey towards the tip, and having a broad, black, sub-terminal band and a narrow white tip; secondaries broadly tipped with white, excepting some of the inner ones; edge of the wing white; bill light yellow, the lower mandible with a bright red patch towards the end; iris hazel, the edge of the eyelids vermilion-red; legs and feet pearly white, with a fleshy or yellowish-fleshy tinge. Total length 28 inches, culmen 3·5, wing 20·0, tail 9·0, tarsus 3·0.

*Young in first autumn.* Head and neck white, striped with greyish brown, most of the feathers having a dark central line; feathers on the back, scapulars, and upper wing-coverts greyish brown at the base, dull dark brown in the centre, and broadly or narrowly tipped with white; primaries dull black, the inner ones narrowly tipped with white, and the innermost marbled with white and light brown; secondaries greyish brown, broadly tipped with white, the inner ones margined and marbled with dull white; tail white at the base, marbled with brown, blackish-brown towards the tip, and narrowly tipped with white; underparts white, spotted and marked with greyish brown; under wing-coverts dirty white, marbled with brown; under tail-coverts white, irregularly barred with brown; bill brownish black; legs dirty grey.

*Young Male* (Pagham, Sussex, July). Similar to the adult bird, but having the head and neck striated with dull brown, and the feathers on the back washed with greyish brown and edged with fulvous; quills black, narrowly tipped with white, a few of the inner secondaries marbled with brown, as in the young plumage; tail white, the centre of most of the feathers marbled with brown; bill dull yellowish, brownish towards the tip.

*Winter plumage.* Similar to the summer plumage, but with the head and neck striated with pale brown.

*Female.* Similar to the male, but smaller, having the bill somewhat less.

THE range of this species is comparatively small, being almost restricted to Europe (where it is found in the northern and central parts of the continent, straggling to the south in the winter season) and North-eastern America. In Great Britain it is more often met with in the north, except in the autumn and winter, when it is dispersed all over the coast. Mr. More, in his paper on the distribution of birds during the breeding-season in Great Britain, writes that "it is only in the north of Scotland where it is at all numerous. The few localities in which it has been found breeding in England are scattered along the west coast, from Cornwall to Cumberland. I cannot find any recent authority, except Yarrell, for its breeding in the marshes at the mouth of the Thames." In Scotland, according to Mr. R. Gray, it is "much more common in the remote northern districts than in the southern counties. There are several breeding-stations within a few hours' journey of Glasgow; two of these are very dissimilar in their character, one being situated near the summit of Ailsa Crag, and the other on the island of Inchmoin, in Loch Lomond. In the former locality the nests are on the grassy slopes of the rock, and are mere hollows formed in the turf, with a very scanty lining; but in the island nursery they are formed of materials similar to those used by the Lesser Black-backed Gull, and are generally found among coarse grass and bushes of heath. Twelve or fourteen pairs annually take up their quarters on Loch Lomond, in the island just named, but seem to keep aloof from the other species frequenting the place, repairing in the daytime to the upland glens, where they occasionally fall in with dead sheep and other animals, on which they surfeit themselves. In the

evenings they may be seen returning to the loch, sailing majestically over the tree tops, or hovering a minute or two above the banks of the brawling torrent to pick up some stranded object. In the east of Scotland this species is also very common. During the months of January and February I have seen as many as twenty of these gigantic Gulls in view at one time at Dunbar, in East Lothian; they usually continue their stately flight in a south-easterly direction until they reach the first of the fish-curing stations along the coast. On being attracted to these places by a plentiful supply of offal, they gather like a flock of Ravens; and I have known as many as six killed at one shot from a door of one of the smoking-houses." Messrs. Feilden and Harvie Brown also write to us that "the Great Black-backed Gull is widely distributed on the mainland of Scotland, and throughout its islands, but in the breeding-season is especially abundant in Orkney and the Shetland Islands, the Outer Hebrides, and St. Kilda."

It breeds in Greenland, but is by no means so common a bird there as the Glaucous Gull, by which it is replaced in most parts of that country, as it is also, to some extent, in Iceland. Professor Newton writes that, "according to Faber, it is a resident in Iceland, and not so common as *Larus glaucus*; but from my own observation I should say it was more abundant than that bird, at least in the south-west, and in the breeding-season. It breeds on the inland waters, which the other is not known to do." In the Færoes, writes Captain Feilden, "it is resident and not uncommon. I did not observe this bird nesting in colonies, as it does in the Shetlands and in the Outer Hebrides. On the occasions that I detected this bird sitting on its eggs, the nest was invariably placed in most inaccessible spots, sometimes on the peak of a lofty drang, surrounded by the sea, always by itself. It is a great robber in the Fuglebergs, and is taxed as a bird of prey." It has not been met with as far north as Spitzbergen, but is common in Scandinavia as far north as the North Cape.

Mr. R. Collett writes that "this Gull ranges along the entire coast of Norway, but is more commonly found breeding from the Trondhjems fiord northward to within the polar circle. It breeds on the outer islands which fringe the coast, and occasionally by the fresh water close to the coast, as at Norevand and Stavanger (*Bahr*), and in Ostfinmark. It is most numerous on the islands off Nordland and Finmarken. South of Stavanger it is most generally seen during migration and in the winter; but it breeds on the Sæster islands, outside the Christiania fiord. Nilsson writes that it is commoner in the Baltic than in the North Sea and the Cattegat, being chiefly found on the outer islands. It breeds in North-east Skåne, is, according to Wallengren, rare (but according to Dr. André common) on Gottland, breeds commonly off the coast of Östergöthland, and is common all the year round off Gothenburg. At Tromsö it is common, and breeds there. It is occasionally observed on the large lakes, as, for instance, on the Wenern." Dr. C. R. Sundström writes to us as follows:—"This Gull breeds, according to Nilsson, both on the east and west coasts of Sweden; but I have generally found it more numerous on the eastern side; and on Gottland it is also far more numerous on the eastern than on the western side of the island. Sometimes it is to be met with on the larger lakes, as on the Wenern; but on the coast it inhabits the outermost fringe of islands, and there deposits its three eggs almost on the bare rocks, making scarcely any nest. Where there are no islands it takes up its quarters on a large stone, or on the shore itself. I have taken the eggs of this species as early as May; and the young are usually fully able to fly by about the middle of July, though on the east coast

they are often much later fledged, owing to the poorer classes taking their eggs, which are used for culinary purposes, and are considered a dainty. The eggs are generally taken twice, and the third lot are left to be hatched out. The peasants on the coast generally know well enough how many pairs of large Gulls breed on their islands, and do not like strangers to molest the old birds. When the young birds are big, though unable to fly, the peasants on the east coast hunt them down; and this sport continues from the middle of July until the young birds can fly. When any one goes ashore on the islands the young Gulls hide in the crevices of the rocks, or try to escape by swimming, but both on the land and on the water prove an easy prey, and are knocked down with the oars or caught and their necks twisted. The young are used for food, and are considered especially good eating; but the full-grown and old birds are never eaten, as they are tough and fishy. One would suppose that, being subjected to so great pursuit, the large Gulls would decrease in number; for the eggs and young of *Larus argentatus* and *L. fuscus*, and even of *L. canus*, are taken; but this is not the case; and the reason, I take it, is the fact that the old birds are never killed, and a few young ones always escape. The revenue derived by the peasants from the Gulls is not so small, as in some places hundreds of eggs and scores of young birds are taken." In Finland it is not common, and Dresser did not meet with it breeding on the northern coast. Mr. Sabanäeff, in the notes he has sent us on the avifauna of Northern and Central Russia, only refers to one having been obtained near Sarepta by Mr. Rickbeil; and Mr. Taczanowski says that it is very rare in Poland, and that he himself has only on two or three occasions seen immature birds on the Vistula. There is not a Polish-killed specimen in any of the collections in that country. It appears, according to Borggreve, on the North-German coasts after having bred; and many winter there, visiting at that season the ponds and lakes near the sea. In Denmark, Mr. Benzon informs us, it is found fishing all along the coasts during the cold season, but is very rarely met with during the summer. It is said to breed on the west coast of Jutland; but he (Mr. Benzon) has never obtained eggs from there. Baron von Droste Hülshoff doubts that it ever breeds on the Dutch coast, and states that, though immature, non-breeding birds are observed during the summer, the adult birds and young of the year do not appear before September.

Baron De Selys Longchamps writes that it is common in autumn and winter on the sea-coasts of Belgium, but only occurs accidentally, after a storm, in the interior. On the Meuse and the Moselle it is very rare; and M. Holandre only observed one adult and several young birds on the latter river. According to MM. Degland and Gerbe it both breeds and is found in France during the season of migration; large flocks pass along the coasts of the north of France in the months of September, October, and December. In the south of France it is rare, and only young birds are met with; and those found in Italy and Sicily during the winter are also young birds. It breeds in the departments of La Manche, Hautes-Pyrénées (?), at Alderney, and on the rocks of Cape St. Martin, between Biarritz and la Chambre-d'Amour. In Portugal it is rare; but in Spain, Mr. Howard Saunders informs us, it is not uncommon in immature plumage near Gibraltar, though adults are rare; and, according to Major Irby, immature birds are occasionally met with in winter in the Straits of Gibraltar, but he never saw an adult bird. In Sardinia, according to Cara, it has twice been obtained in the winter season; and Doderlein speaks of it as one of the rarest Gulls which visit the coasts of Sicily in winter. Lindermayer records it as very

rare in Greece; and Mr. Robson writes to us that he has never known it to occur in Turkey, and that he scarcely thinks it could have been procured there without his hearing of it. It has, however, been known to visit the Danube; for our friend the Ritter von Tschusi Schmidthofen writes to us that "a few have been shot on the Danube and the Attersee in immature plumage; an adult male, shot near Sleyer, and a nearly adult male are in the St.-Florian Museum, and an immature female in the Francisco-Carolinum Museum, at Linz. In the Tyrol it is rare during the summer on the Garda Lake (fide *Althammer*); and it has been shot on the Wocheiner Lake, in Krain (fide *Freyer*). In Mähren a mature and an immature male were shot in October 1852 on a mountain-stream, where they were feeding on trout. So far as we can ascertain, this Gull has not been met with further eastward than Sarepta, nor south of the Mediterranean. To the westward, however, its range extends to the Canaries, where, according to Bolle, it is very common on the Island of Alegranza. To the north-west it ranges across the Atlantic to the north-eastern portion of America." Audubon writes respecting its range that "few individuals are to be found northward of the entrance into Baffin's Bay, and rarely are they met with beyond this, as no mention is made of them by Dr. Richardson in the 'Fauna Boreali-Americana.' Along our coast none breed further south than the eastern extremity of Maine. The western shores of Labrador, along an extent of about three hundred miles, afford the stations to which this species resorts during spring and summer; there it is abundant, and there it was that I studied its habits. The furthest limits of the winter migrations of the young, so far as I have observed, are the middle portions of the eastern coasts of the Floridas. While at St. Augustine, in the winter of 1831, I saw several pairs keeping company with the young Brown Pelican."

The Greater Black-backed Gull is certainly most predatory in its habits, and most justly bears but a bad character amongst game-preservers; for young water-fowl as well as the young of land birds rarely come amiss to this bold robber when foraging for food, and many are the Ducks which, when wounded by the wild-fowl gunner, fall to its share. Dr. Sundström, of Stockholm, informs us that in Sweden, "on the island of Åland, where this Gull is common, it is justly looked on as a pest, and destroyed whenever it can be approached, which is not so often, as it is very wary when it finds itself followed. It daily devours large numbers of fish, and destroys the eggs and young of the Eider and other Wild Ducks. I have seen it swallow small Eider Ducks, and kill and eat larger ones. On Åland I saw one pursue an almost full-grown young bird of the Red-breasted Merganser (*Mergus serrator*), force it to dive again and again until it was tired out, and then killed it. Any dead birds that are floating on the water or are on the ground are soon picked up by this Gull; and altogether I consider that it should be kept down in numbers as much as possible, being a most destructive bird, especially to the Eider and other useful species of water-fowl." Mr. R. Collett, of Christiania, also speaks of it as "an arrant robber, not only destroying the eggs of the Eider and of other Ducks, but also killing and devouring numbers of newly hatched young. It is especially injurious from the number of young Eiders it destroys, both when they are on their way from their nest to the sea, and also when under the care the mother. The latter tries hard to protect her young; but the Gull tires her by repeated stoops until it catches one of the young, which is then taken to a rock, torn in pieces, and devoured."

This species breeds throughout Northern Europe, as far south as France and North Germany, and makes a large nest of grass, in which it deposits two or three eggs. Mr. A. W.

Johnson, who lately took the eggs of this Gull in Shetland, describes the nest to us as being placed on the ground amongst the grass, large in size, and loosely put together, covering a circle of about two and a half feet, deeply hollowed, the materials used in the formation of the nest being dry tufts of grass, sheep's wool, heather moss, and large feathers. Referring to its nidification in Scotland, Messrs. Harvie Brown and Feilden write to us that "wary and distrustful by nature, its breeding-stations appear to be selected with a special view to immunity from intrusion, and, where unmolested, we find them nesting in communities on low grassy islets of freshwater lochs. Such nesting-places are to be found in the Outer Hebrides, on a small lake not far from Lerwick, in Shetland, on Loch Lomond, and also in the south-west of Scotland. Detached 'holms,' difficult of access, and almost inaccessible 'stacks' are favourite nesting-places; and in such localities they congregate in large numbers for the purpose of incubation. Scattered pairs breed along the coast, returning year after year to the same spots; and pairs of these birds are also to be found on many inland lochs, breeding in company with colonies of the Lesser Black-backed Gull (*Larus fuscus*) and Herring-Gull (*Larus argentatus*), but always placing their nest somewhat apart from them. The larger species is easily distinguished from the Lesser Black-backed Gull, not only by its greater size, but also by its deeper and more defiant note. When taking the eggs of the four common species of Laridæ we have noticed that the Common Gull (*Larus canus*) flies closely over head uttering plaintive mournful cries; the Herring-Gull is especially clamorous, the Lesser Black-backed Gull almost equally so, whilst the Great Black-backed Gull sails overhead, occasionally making swoops at the intruder, and uttering a loud, indignant croak. Along the east coast of Scotland this Gull is not so abundant during the breeding-season; but great numbers visit the friths in the month of November in company with other species, following the shoals of 'Garvies,' which at that time begin to appear upon the coasts." The eggs of this Gull are olive-brown in colour, sometimes darker and sometimes lighter, spotted and blotched with dark brown; compared with the eggs of *Larus glaucus* they are darker, and have not the greenish tinge that usually pervades the eggs of the latter species. Dr. E. Rey gives the average size of twenty-three eggs of the Greater Black-backed Gull as 78.5 by 54.1 millimetres, the largest measuring 86.0 by 55.0, and the smallest 72.5 by 52.0 millimetres respectively.

The figures and descriptions are taken from specimens in Dresser's collection.

In the preparation of the above article we have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Uddevalla, Sweden, April 6th, 1872. *b*, ♂, *c*, ♀. Stromness, Orkneys (*Dunn*). *e*, *f*. Pagham, July, 1870 (*R. B. S.*). *g*, ♀. Norfolk coast, November 1872 (*J. H. Gurney, jun.*).

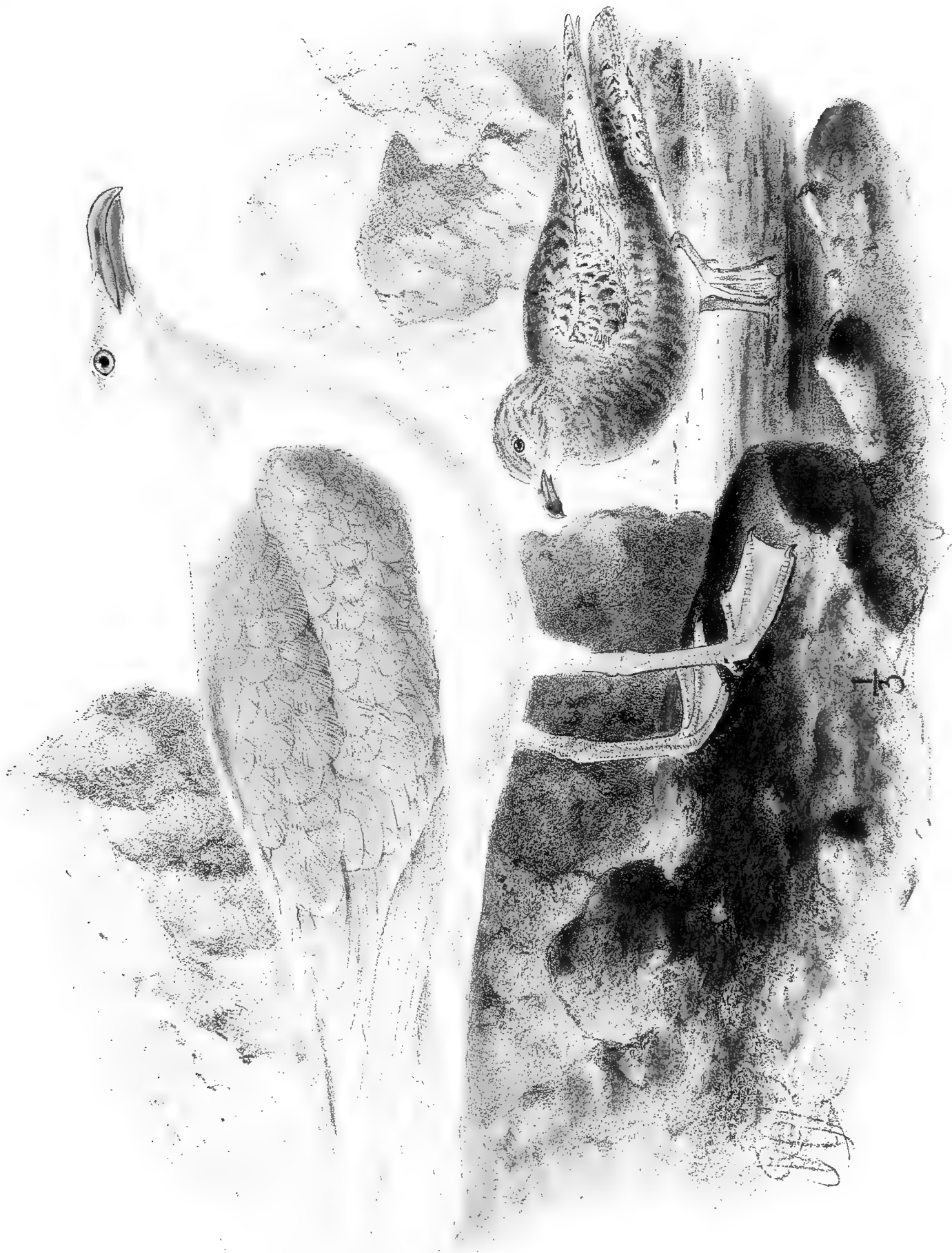
*E Mus. J. H. Gurney, jun.*

*a*, ♂. Yarmouth, November 1867. *b*, ♀. Rye, Sussex, November 1871. *c*, *juv.* Bamborough, April 25th, 1866 (*J. H. G., jun.*).

*E Mus. Howard Saunders.*

*a*, ♂, *b*, ♀. Orkneys (*Dunn*). *c*. Greenland. *d*, *juv.* Hiddensee, Germany (*Möschler*).





GLAUCOUS GULL.  
LARUS GLAUCUS

Monter Bros imp

J.C. Keulemans del

## LARUS GLAUCUS.

(GLAUCOUS GULL.)

*Bürgermeister*, Martin, Spitsb. oder Groenl. Reise, p. 60, tab. L. fig. c (1675).*Larus glaucus*, Brünn. Orn. Bor. p. 44 (1764).*Larus glaucus*, Fabricius, Faun. Groenl. p. 100 (1780, ex Brünn.).“*Larus giganteus*, Temm.,” Benicken, Ann. Wetter. Gesellsch. iii. p. 140 (1814).*Larus leucereutes*, Schleep, Neue Ann. Wetter. Gesellsch. i. p. 314 (1819).*Larus consul*, Boie, Isis, 1822, p. 875.*Larus glacialis*, Macg. Mem. Wern. Soc. v. pt. i. p. 270 (1824).*Leucus glaucus* (Fabr.), Kaup, Natürl. Syst. p. 86 (1829).*Larus hutchinsii*, Richards. Faun. Bor.-Am. ii. p. 419 (1831).*Glaucus consul* (Boie), Bruch, J. f. Orn. 1853, p. 101.*Laroides glaucus* (Fabr.), Bruch, J. f. Orn. 1855, p. 281.*Plautus glaucus*, Reichenb. fide Bp. Consp. Gen. Av. ii. p. 215 (1857).

*Eismöve*, German; *De Burgemeester*, Dutch; *Graamaage*, *Perlemaage*, Danish; *Maasi*, Færoese; *Naya*, *Nayavek*, *Nayainak*, Greenlandic; *Hvit-máfur*, *Grá-máfur*, Icelandic; *Stor hvitvingad Trut*, Swedish; *Morskaia-Tschaika*, Russian.

*Figuræ notabiles.*

Werner, Atlas, *Palmipèdes*, pl. 12; Kjærb. Orn. Dan. taf. 42; Fritsch, Vög. Eur. taf. 56. fig. 8; Naumann, Vög. Deutschl. taf. 264; Sundevall, Svensk. Fogl. pl. 79. fig. 2; Gould, B. of Eur. pl. 432; id. B. of G. Brit. v. pl. 57; Schlegel, Vog. Nederl. pls. 340, 341; Audub. B. of Am. pl. 449.

*Ad. ptil. æst.* albus, dorso et alis suprâ pallidè cæruleo-cinereis: pedibus pallidè carnis: rostro flavo, mandibulâ versus apicem plagâ magnâ rubrâ notatâ: iride pallidè flavâ, marginibus palpebrarum rubris.

*Ad. ptil. hiem.* capite et collo pallidè fusco-cinereo striatis.

*Juv.* capite et collo sordidè albidis, profusè pallidè fusco-cinereo striatis: corpore suprâ albido, pallidè fusco-cinereo adumbrato et fasciato: corpore subtùs pallidè fusco-cinereo, vix albido notato: hypochondriis, abdomine imo et subcaudalibus magis albidis.

*Adult Male* (Greenland). Mantle pearl-grey or very pale blue-grey; entire rest of the plumage pure white; legs light flesh-colour; beak yellow, with a red patch towards the tip of the lower mandible; iris light yellow; the edge of the eyelid bright vermilion-red. Total length about 27 inches, culmen 3.1, wing 18.6, tail 8.5, tarsus 2.8.

*Adult Female.* Resembles the male.

*Young* (near Stockholm, 18th February). Head and neck dull white, closely striped with pale brownish

ash; upper parts generally dull white, clouded and barred with pale ashy brown, quills pale brownish ash; underparts pale brownish ash, indistinctly marked with dull white; the flanks, lower abdomen, and under tail-coverts much whiter than the rest of the underparts.

*Adult in winter.* Resembles the summer plumage, but the head and neck are faintly striped with pale brownish grey.

*Young in down.* Resembles the young of the Herring-Gull, but is paler, having fewer and fainter dark markings on the back.

AN inhabitant of the Arctic Regions of both the Old and New World, the present species of Gull straggles southward only during the winter season, as a rule adult birds being less seldom seen than immature ones in localities much below the arctic zone; and its breeding-haunts are always situated far north.

It visits the shores of Great Britain during the autumn and winter, but never remains to breed with us, though in the north of Scotland it is often seen quite late in the spring. It has been met with sparingly on most parts of the English coasts down to the counties skirting the Channel. Mr. Mansel-Pleydell, remarking that Yarrell speaks of it as having been killed at Weymouth, adds that "Mr. Rolls had one to set up which had been shot in Weymouth Bay. Mr. Thompson possesses one that was shot in Lodmoor, January 3rd, 1870. The Rev. C. Torkington procured one from Abbotsbury, which had been caught on the shore in a Gull-trap, and was brought to him alive. Another was shot in Poole Harbour, which is now in the collection of Mr. Pike." I have known specimens to have been obtained on various parts of the east and south coasts; and Mr. Cordeaux says that it has been killed on several occasions during the autumn and winter near Flamborough; immature birds being chiefly met with; but a fine adult specimen, now in the collection of Sir Hy. Boynton, Bart., was shot at Bridlington early in January 1871. Towards the north it becomes commoner; and Mr. Hancock says, "on the coasts of Northumberland and Durham it is an autumn and winter visitant, not uncommon on the coast during the winter months in the immature plumage. Adults are rare, though I have two or three that were shot in our district." Writing respecting its occurrence in Scotland, Mr. Robert Gray says (B. of W. of Scotl. p. 490), "throughout the western counties of Scotland this large Sea-Gull is in general less plentiful than on the eastern shores. It is seldom, indeed, found roaming within the circle of the inner islands, but for the most part remains in the vicinity of the Outer Hebrides. Nor is it even there a regular winter visitant in flocks, some seasons passing with only a stray bird or two to represent the migratory companies that at other times visit these islands. In the winter of 1862-63 considerable numbers were seen in North Uist, frequenting chiefly the west side of the island and the Sound of Harris. In this district (distinguished for large tracts of sand and mud at low tides) these flocks generally take up their quarters, feeding on stranded fish and other garbage left by the sea. They seldom or never go inland; but when rough northern storms are blowing the masses of foam over the sand, their usual resting-place, they get on the wing and travel along the shore, visiting the sands of Benbecula and South Uist, and returning to their headquarters when the weather moderates." Since writing the above Mr. Gray, in a short article on the Sea-Gulls frequenting the estuary of the Forth, gives an interesting account of a visit made by him in company with Mr. Harvie-Brown

to Kincardine in December, when, owing to a storm having driven the sea-birds towards the land, they found vast numbers of Sea-Gulls, amongst them many of the present species, of which, he relates, they saw as many as fifty on the wing at once; and there must, he adds, have been, on a moderate computation, from a hundred and fifty to two hundred in the firth between Alloa and Kincardine alone. For some years, he writes, "I have entertained the idea that it is a regular migrant as far as the estuary of the Forth. On the Aberdeenshire coast it was observed two years ago in considerable numbers; and a correspondent there informed me that he never visited the shore during the winter without seeing a number. I had myself killed stray examples thirty years ago on the coast of East Lothian; and in the Outer Hebrides small flocks have of late years been seen frequenting the sounds which separate the islands of Benbecula and the North and South Uist." It is said to be more numerous, perhaps, in the Shetland Islands than elsewhere in Scotland; and Dr. Saxby writes (B. of Shetl. p. 348) as follows:—"It never breeds in Shetland, but often stays so very late as to give the impression that its not remaining throughout the year is determined by only the barest turn of the scale. I have seen it in May, and have met with it even as late as June, the first birds returning for the winter usually appearing about the middle of October, when small flocks may be seen composed of both old and young, the latter predominating in number. In winter by far the larger proportion are young birds, nearly all the old ones habitually disappearing shortly after their arrival." It is occasionally seen on the coasts of Ireland, as in England, in the winter season; but its occurrences are not frequent. Professor Malmgren says that it occurs numerously on the coasts of Spitzbergen, and breeds in the bird colonies, usually taking possession of the highest ledges; but sometimes it nests high up in cliffs where other species do not breed.

Professor Newton writes that it is the most common of the large Gulls in Greenland. At Najartul, south of Godthaab, it is said to breed by itself, but most generally in company with Kittiwakes and Iceland Gulls. It is found on the west side of Davis's Strait and the east coast of Greenland, and is said to be as numerous in the Polar Sea as it is in Davis's Strait. Professor Newton also says that it is common and resident in Iceland, and, according to Faber, it breeds on the rocky coasts of the promontory which divides the Faxafjörður from the Breiðifjörður. Mr. Milner took its nests on an island in the first-named bay; and any number of its reputed eggs may be bought at Reykjavik; but they are in all probability those of the Great Black-backed Gull. According to Svabo the present species was unknown in Færoe before 1756, which was a bad year in Iceland. It now arrives there, Captain Feilden writes, late in the autumn, and leaves early in February. In Norway, Mr. Collett informs me, it breeds sparingly only in the northern portions of the country and as far south as Stadt, north of Bergen. During winter it visits the southern coasts in small numbers, being nowhere numerous. In Sweden it is, as in Norway, uncommon in the south, becoming more numerous towards the north. Nilsson says that it occurs rarely near Gothenburg and on the Bohuslän coast, and more frequently on the shores of the Gulf of Bothnia and the Baltic. According to Dr. Palmén it occurs by no means rarely on the south coast of Finland in October and November, and in April and May, and has been observed at Sibbo, Helsingfors, Helsinge, Esbo, Kyrkslätt, Jugo, Porkkala, Åland, &c. It not unfrequently remains in the outer fringe of islands in January and February, and occasionally penetrates far up the bays, as for instance in Thölö Bay, near Helsingfors, Uskela,

&c. On Åland it remains over winter. Sometimes it is found in the interior, having probably straggled out of its course on passage. Lieutenant Bosin observed it in April 1849 in Hango; Mr. J. von Wright in Rautalampi in the spring of 1845 and 1846, and in May 1847. A young bird was shot near Kuopio on the 22nd November 1870, and another on the 3rd December in the same year at Tüttala waterfall, near Nyslott. According to Nylander one was shot near Uleåborg in the autumn of 1853. In Spitsbergen and Novaya Zemlya the present species is generally distributed and common. Professor Newton, who, however, remarks that it was not so numerous in Spitsbergen as the Kittiwake, says (*Ibis*, 1865, p. 509) that it "probably ranges along the entire coast of the country. Sir James Ross states that it was abundant on the shores of Low Island, though it was not seen to the north of lat. 81°. My friends, who went to the eastward from the Thousand Islands, met with many young birds, half-fledged, at one spot at least; and our pilot told me it was found breeding by the boat's crew who visited Giles's Land in 1859." Von Heuglin, who records it from Novaya Zemlya, says that it is tolerably common southward as far as the Yugorsky Straits, and it is found on the shores of Northern Russia. Messrs. Seeböhm and Harvie-Brown, who met with it on the Petchora river, write (*Ibis*, 1876, p. 453) as follows:—"Our first acquaintance with the Glaucous Gull in the North of Russia was made on the night of the 13-14th July, when we landed upon No. 4 of the Golaievskai group of islands. Here we shot several old birds, and secured specimens of the young in down, which latter, upon comparison, resemble the young of the Siberian Herring-Gull, but, as might have been expected, have fewer and fainter dark markings on the back. The nests were heaps of sand hollowed slightly at the apex; and a few irregular disposed tufts of coarse seaweed formed the only lining. Seaweed and small drift wood were the only materials on the low almost perfectly level sandbank which the birds could choose from. Afterwards we saw Glaucous Gulls commonly along the shore at Dvoinik, and shot specimens from the deck of the wrecked sloop." According to Borggreve its visits to the north coasts of Germany are tolerably regular, but it is seldom met with at any distance from the sea-shore. It is sometimes found on the coasts of Denmark; and Kjærbølling records several instances of its occurrence there. On the coast of Holland it is said to occur not unfrequently, especially after bad weather; and stragglers, usually in immature dress, are met with in winter on the coasts of Belgium and France; but M. Meezemacker, of Dunkerque, once obtained an adult bird there. Mr. A. Lacroix says that he received a young bird from La Nouvelle, in Aude, in March 1859, and adds that it is rarely seen on the coasts of the Pyrénées Orientales. It is included by Professor Barboza du Bocage in his list of the birds of Portugal with a query; and I find no record of its occurrence on the coasts of Spain. It is stated by several naturalists to occur in Italy; but Count Salvadori points out that many of the Italian naturalists have confused it with the Herring-Gull. There are, however, he says, two specimens in the Genoa Museum, said to have been obtained in Liguria, which are undoubtedly referable to the present species. I do not find any record of its occurrence in Greece or Turkey; but Dr. A. Fritsch says that one killed in Bohemia is in the Woboril collection, and he received a second alive from the vicinity of Beraun. On the coast of Asia Minor it is also wanting; and the only instance of its having been met with in Africa that I find on record is that mentioned by Colonel Irby, who says (*Orn. Str. Gibr.* p. 215) that it was once obtained by Favier near Tangier in immature plumage. It inhabits the

north coasts of Asia, and has been found tolerably far south. Von Middendorff says that he found it breeding rarely in  $74^{\circ}$  N. lat. in the tundras on the Taimyr river, and did not observe it before the 15th June (O. S.). Down the river it was commoner, but always seen in pairs, and on the 15th of August in  $75^{\circ}$  N. lat. they were still seen about the breeding-places. On the 3rd and 4th of September most migrated away after a heavy snow-fall, and after ice had formed on the Taimyr lake; but as late as the 21st September he saw an old and a young bird flying down the river. Dr. Radde did not meet with it; but Von Schrenck obtained an adult bird on the 31st July, 1855, in the north bay of Lake Baikal, where the Angara empties itself into the lake, in  $55^{\circ}$  N. lat., and says that it was exceedingly rare there, and that he only observed it on three occasions. According to Pallas, it inhabits the sea of Ochotsk. According to Mr. Swinhoe (Ibis, 1874, p. 165), an adult female was shot at Hakodadi, in Japan, in March.

In America the present species is restricted to the northern portion of the continent, inhabiting during the summer season Arctic America, and in winter straggling along the coast to the middle States. Mr. Dall says that it is not rare about St. Michaels, in Alaska, but does not ascend the river. Captain H. W. Feilden, who met with the present species as far north as  $82^{\circ} 34'$  N. lat., when on the last Arctic expedition, sends me the following note, viz.:—"The Glaucous Gull breeds abundantly on the Cary Islands, Baffin's Bay. I found a colony nesting on a cliff near Payer harbour, a little south of Cape Sabine, but did not notice any other nesting-places further to the north. Occasional stragglers of this species were seen in the autumn and summer as far north as the winter quarters of H.M.S. 'Alert,' in lat.  $82^{\circ} 27'$  N., whilst the most northern individual that we saw was one I noted in lat.  $82^{\circ} 34'$  N."

In habits the present species assimilates closely to the Great Black-backed Gull; and, like that species, it is extremely voracious, and commits great depredations amongst the eggs and young of other sea-birds and water-fowl. It usually breeds where there is a large colony of other sea-birds, and, to a large extent, it both feeds its young and itself on the eggs and young in down of its weaker neighbours, and renders itself a perfect pest to them. The young of the Eider, and of several others of the sea-ducks, are looked on by it as tender morsels; and in places in the extreme north where these birds breed in large numbers, the Glaucous Gull is almost sure to be present, and devours large numbers of the young birds, pouncing down on and catching them just as it requires them. It doubtless also catches the smaller species of mammals, and waits to take possession of the remnants left by the seal-hunters when they have cut up a seal; or where there is a carcass of a whale or a seal cast ashore, these Gulls collect together like Vultures to regale on it. The call-note or cry of this species closely resembles that of *Larus marinus*, as does also its flight; but when the two species are found together they keep apart in separate flocks. According to Mr. Gray, however, the flight of the present species is soft, sedate, and Owl-like, and easily distinguished from that of *Larus marinus* or *Larus leucopterus*. The birds they saw were chiefly flying along the muddy shores, and not over the water like the Kittiwakes. One which passed him twice stooped in its flight and lifted a dead Kittiwake, which it carried to a considerable distance in the air and then dropped.

The Glaucous Gull breeds either on ledges of the rocks or on the ground, making a nest, like *Larus marinus*, of bunches of grass or seaweed, collected carelessly together on the rock; or else a hole is scraped in the soil and scantily lined with grass &c.; and three eggs is the number

usually deposited. Eggs in my collection from Egedesminde, in Greenland, resemble those of *Larus marinus*, but appear subject to rather more variation in the markings: one is pale sea-green with two or three purplish shell-blotches and several dark brown surface-spots; and two others are richly marked with peculiar hieroglyphic-like broad lines drawn chiefly round the larger end. In size they are similar to those of the Great Black-backed Gull.

The present species varies not a little in tinge of colour as well as in size, some being much paler and smaller than others; but, as a rule, I have found that adult examples vary in length of wing from about eighteen to nineteen and a half inches. On these differences in size and in shade of colour other so-called species, as, for instance, *Larus giganteus* and *Larus hutchinsii*, have been founded; but I cannot think that they are deserving of specific distinction. *Larus hutchinsii* is merely a white variety of the present species, and appears to be of very rare occurrence: it has been met with on the American coast; and one has also been recorded from Norway by my friend Mr. R. Collett.

The specimens figured are the adult and young birds above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, *ad.* Greenland (*Erichsen*). *b*, ♀ *juv.* Waxholm, near Stockholm, February 18th, 1872 (*Meves*). *c*, *juv.* Yorkshire coast, purchased in Leadenhall Market (*H. E. D.*).





ICELAND GULL.  
LARUS LEUCOPTERUS.

## LARUS LEUCOPTERUS.

(ICELAND GULL.)

*Larus argentatus*, Sabine, Trans. Linn. Soc. xii. p. 546 (1818, nec auctt.).*Larus leucopterus*, Faber, Prodr. isl. Orn. p. 91 (1822).“*Larus glaucoides*, Temm.,” Boie, Isis, 1822, p. 562.*Larus islandicus*, Edmonst. Mem. Wern. Soc. iv. p. 506 (1823).*Larus arcticus*, Macgillivray, Mem. Wern. Soc. v. p. 268 (1824).*Larus minor*, C. L. Brehm, Vög. Deutschl. p. 736 (1831).*Laroides glaucoides*, C. L. Brehm, op. cit. p. 744 (1831).*Laroides leucopterus* (Fab.), C. L. Brehm, op. cit. p. 745 (1831).*Laroides subleucopterus*, C. L. Brehm, op. cit. p. 746 (1831).*Glaucus leucopterus* (Fab.), Bruch, J. für Orn. 1853, p. 101.*Glaucus glacialis*, Bruch, J. für Orn. 1853, p. 101.*Leucus leucopterus* (Fab.), Bp. Consp. Gen. Av. ii. p. 217 (1857).*Plautus leucopterus*, Reich., fide Bp. ut suprâ (1857).

*Goëland leucoptère*, French; *Polar-Meve*, *kleine weiss-schwingige Meve*, German; *Kleine Burgemeester*, Dutch; *Hvidvinget Maage*, Danish; *Valmaasi*, Færoese; *Nyangoak*, Greenlandic; *Hvit-máfur*, *Grá máfur*, Icelandic; *Hvitvingad Trut*, Swedish.

*Figuræ notabiles.*

Kjærb. Orn. Dan. taf. 41; Naumann, Vög. Deutschl. taf. 265; Gould, B. of Eur. pl. 433; id. B. of G. Brit. v. pl. 58; Reichenb. Syst. Av. pl. 26. figs. 827, 829.

*Ad. et juv.* *Laro glauco* omnino similis, sed minor. *Ad.* culm. 2·5 poll., al. 16·8, caud. 7·6, tars. 2·5.

*Adult Male* (Greenland). Differs from *Larus glaucus* only in being smaller in size, measuring—culmen 2·5 inches, height of bill at the base 0·65, wing 16·8, tail 7·6, tarsus 2·5.

*Young.* Resembles the young of *L. glaucus*, but is smaller in size.

*Adult in winter.* Similar in plumage as in summer, except that the head and neck are narrowly streaked with dull light brownish grey.

THIS species of Gull, which bears about the same affinity to *Larus glaucus* as *Larus fuscus* does to *L. marinus*, inhabits the high latitudes of the Palæarctic and Nearctic Regions, straggling southward only during the autumn and winter; but it appears that the young birds are those which are more frequently met with, the fully adult ones being seldom seen away from the far north. It visits the British Isles during the winter, usually in small numbers, but sometimes in tolerably large quantities, and is seen in almost all parts of our coasts down to the

counties skirting the British Channel. In the winter of 1874-75 it was unusually numerous, as were indeed almost all the northern Gulls. Mr. Gatcombe writes to me as follows:—"Owing to the long-continued gales, I suppose, last winter produced more of this species on the coasts of Devon and Cornwall than were remembered to have ever appeared before—numerous specimens, both of young and *adult*, having been seen and obtained on the coasts and in our harbours. A specimen or two of the immature might be occasionally seen on the coast, but the adult very rarely. There seems to be a regular gradation in size between this species and *Larus glaucus*, as I have seen *Larus leucopterus* from the size of the common 'Mew' up to that of a small Glaucous Gull." It is occasionally seen in autumn and winter all along the east coast. Mr. Cordeaux says that those which are obtained off Flamborough Head are almost without exception in immature dress, and that he has once seen it within the Humber district, an immature specimen having been obtained there as late as the 18th April, 1872. In Scotland, Mr. Robert Gray says (B. of W. of Scotl. p. 485), "although by no means a common bird on the coasts, it has been frequently met with on both the eastern and western shores. From Shetland to Berwickshire immature birds are seen or killed almost every winter; and the same may be said of its appearance from the coast of Skye to the south of Ayrshire. Mr. Elwes informs me that the Iceland Gull is a rare winter visitor in Islay; but I have not heard of its occurrence at any time on the outer islands."

Mr. R. Gray and Mr. J. A. Harvie-Brown have both published some most interesting notes respecting the occurrence of the present species on the Scotch coast in the winter of 1872-73 (Proc. Nat.-Hist. Soc. Glasg. Jan. 1873). The former writes, "Dr. Dewar reported that he had seen an Iceland Gull in full adult dress." He further adds that he was fortunate enough to see and fairly recognize five if not six adult specimens, and had not the least doubt of the identification; and he remarks that during the winter in question it was certainly seen in much greater numbers than we have any previous record of. Mr. J. A. Harvie-Brown, referring to the above-quoted notes by Mr. Gray, writes (*l. c.* p. 210) as follows:—"Since then I have met with them abundantly; on some days they were much more numerous than the Glaucous Gull (*L. glaucus*). But it was only at sunrise on the 15th of this month that I realized in my mind the vast numbers which are frequenting the firth. Whether those I saw on this day had only lately arrived or had merely remained out of sight, it is difficult of course to determine; but I think, from what I have observed of late, that the latter is the more probable supposition. On the above-mentioned date I counted in a few seconds no less than twelve adult Iceland Gulls as they flew low against the wind, showing the white primaries distinctly; and as I afterwards slowly drifted in a boat along the side of the mud-banks, Iceland Gulls were constantly in sight, two, three, or even more at a time. These birds were all flying away inland, and, in company with Glaucous and other Gulls, were alighting on a ploughed field on Dunmore estate. Towards the afternoon scarcely a single Iceland Gull was visible over the water. As a large body of Gulls have for some time past frequented this particular field, I am in the belief that the Iceland Gulls have been generally associating with them, and, in fact, that they are not so exclusively maritime in their habits as has been described. Moreover it is seldom that I have observed the Iceland Gull following the shoals of garvies (*Clupea sprattus*), or fishing for them in the manner of the Kittiwake (*Rissa tridactyla*), or even to the same extent as the Glaucous or other large Gulls. They

seem rather to hold aloof from the other species when the latter are fishing, and fly, often in pairs, far inland over the mud flats. Upon other occasions, on firing a shot in early morning, when the crowd of Gulls was resting on the edge of the mud, I have observed that they almost invariably wing their way to the above-mentioned field, and, when the tide rises and the fishermen begin drawing their nets, do not, like the other species, flock down to feed on the fish which escape through the meshes, and which struggle for a time near the surface. Upon the 15th of January I again paid an early visit to the coast and took up a position on the pier. Thousands of great Gulls (*Larus marinus*, *L. fuscus*, *L. glaucus*, and *L. argentatus*) were massed together on the mud-edge; and on examining them carefully with my glass, I could distinguish many of the more slender-built Iceland Gulls between them. At length one adult Iceland Gull flew past me, and I fired, but ineffectually. With the rushing noise of many wings, the great body of Gulls rose at the report of the gun, and, along with other flocks lower down the firth, winged their way, as before, inland, and the air became filled as by a snow-drift."

Mr. Saxby says that it is a regular winter visitant to the Shetland Isles, usually, however, taking its departure towards the latter end of March, though he has seen a straggler as late as May. Thompson says that it only occurs extremely rarely on the coasts of Ireland.

In Greenland it is, according to Professor Newton, reported to be the most common Gull after the Kittiwake. He adds that it breeds in both Inspectorates, but more commonly in the southern. It has also been observed on the east coast, and is said to breed on the Parry Islands. Dr. Finsch says that on the German arctic expedition two specimens were preserved—one obtained late in April 1870, and the other in September 1869, on Sabine Island. In Iceland it is, Professor Newton states, "a winter visitant only, arriving, according to Faber, towards the end of September, and mostly leaving by the end of April, though some, chiefly birds in immature plumage, remain later into the summer. Mr. Wolley had one for some weeks alive at Kirkjuvogr. It had been caught in a fish-hook, and in a day or two grew so tame as to take food in one's presence."

Captain Feilden says that Herr Müller informed him that on the 4th September, 1870, he observed an old bird of this species on Naalsoe; the adults are, he adds, but seldom seen in the Færoes, but the young are well known as winter visitants. In Norway, Mr. Collett says, it "occurs annually in the winter months on the fjords of West Finmark down to Tromsö. Two individuals (male and female), shot out of a flock which visited Tromsö Sound in December 1870, were transmitted to the University Museum by Pastor Kaurin." Pastor Sommerfelt, who says that it occurs not unfrequently on the Varanger fiord, adds that it is stated to breed on Renöen, near Vardö, but it is uncertain as to whether it really breeds in East Finmark.

According to Nilsson (Skand. Fauna, p. 345) it occasionally straggles to the coasts of the Baltic; there is in the Lund Museum a specimen shot on the coast near Stockholm; and in the Stockholm Museum is one obtained at Elfkarlby; one is stated to be in the Gefle Museum which was found frozen to death on a lake in Jemtland; and, according to the late Professor Fries, one was shot in Södermanland in the winter of 1836. According to Dr. Palmén (Finl. Fogl. ii. p. 591) a specimen was shot by Mr. Heikell, near Helsingfors, on the coast of Finland, in February 1836; but I find no record of its occurrence on the Baltic coast of Germany, though, according to Dr. Quistorp (J. f. O. 1860, p. 369), three examples were killed on the Hiddensee, on the west coast

of Rügen, in December 1859. According to Professor Kjærbølling it is met with as a straggler on the coast of Denmark. Steenberg received two specimens from the Sound, where he observed it in January 1823; and an example from Bornholm is in the Museum at Copenhagen. According to Baron von Droste-Hülshoff it has on several occasions been shot on the coasts of the North Sea, especially on the Netherlands coast; and Messrs. Degland and Gerbe write (Orn. Eur. ii. p. 412) as follows:—"It has on several occasions been killed on the coast of Dunkerque, in the Bay of Cancale, and in the Bay of Somme. We have seen two immature specimens in the Paris market from the last locality." So far as I can ascertain, it has not been observed further south than the French coast. As regards its occurrence in Asia, all I can ascertain is, that Von Middendorff believes that he saw it on the Taimyr in 75° N. lat.; but it is met with in North America. Swainson states (Faun. Bor.-Am. ii. p. 418) that "during Captain Ross and Sir Edward Parry's first voyages many specimens of this Gull were obtained in Davis's Straits, Baffin's Bay, and Melville Island." Messrs. Dall and Bannister met with it in Alaska. The former gentleman says that it is very abundant on the Yukon, below Anvik, but above that point it is rare, and replaced by *Larus argentatus*. Its eggs were laid on the bare sandy beach, in a small depression, about June 5th to 10th. It is also very common about St. Michael's. To this Mr. Bannister adds that it is the most abundant species of Gull found at St. Michael's. On the east coast it ranges down to Labrador; but I never met with or heard of it when in Nova Scotia and New Brunswick.

Respecting the habits of this Gull I find comparatively little recorded; but it is stated to agree tolerably closely with *Larus glaucus*. Mr. J. A. Harvie-Brown, who had excellent opportunities of observing it in a wild state, says (*l. c.*) that it "can be separated by the field-naturalist from the Glaucous Gull by its neater, more slender appearance, standing higher on its legs, having a more cuneate shape posteriorly, and the wings more tapering when closed. Further, it appeared to me that the Glaucous Gulls, when resting on the mud, and with the wings closed, carried the tips of the wings higher than the end of the tail, but that the Iceland Gulls carried their wings on the same, or nearly the same, level as the tail, thus imparting to these birds a more tidy, trim appearance than their big brothers possessed. Those who have watched the tame Goose of our farm-yards, and have had opportunities of comparing with it the lighter, handsomer form of the tame Grey Lag Goose (*Anser ferus*) will more easily understand some of the comparisons I have above drawn. When flying, the action of the Iceland Gull is more airy and buoyant, less Owl-like, than that of the Glaucous Gull. The adults, when flying low or against a dark cloud, show the white primaries, like a narrow strip of silver along the wing." He adds that it is extremely wary, and that the adult birds are especially shy.

Mr. Saxby (B. of Shetl. Isles, p. 336) says:—"At any distance it may be readily recognized by its acutely pointed and somewhat long white wings, and by a peculiar roundness of body. The note, also, has a character of its own, somewhat resembling that of the common Goose. The bird seems to be partial to vegetable food, often resorting to the fields, where it may not seldom be seen near the pigs, which in Shetland are tethered by long ropes fastened to a stone or to a stake in the ground. Possibly the earthworms rooted up may be an attraction. In the stomach I have found a considerable quantity of oats and vegetable fibre, with numerous small pieces of quartz."

It breeds plentifully in Greenland, and, as above stated, also in North America, laying its eggs in a mere depression scratched in the ground. Its eggs, of which I have several from Greenland, resemble those of the Glaucous Gull, but are much less in size, being scarcely larger than those of the Lesser Black-backed Gull.

The specimen figured is an adult bird in full plumage, being the one above described. As the immature bird differs only in size from that of the Glaucous Gull, I have not deemed it necessary to figure it.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a, ♂ ad., b, juv. Greenland (Möschler).*

*E Mus. Howard Saunders.*

*a, b, c, ad., d, e, juv. Iceland (Proctor).*



## Genus RISSA.

*Larus* apud Brisson, Orn. vi. p. 185 (1760).

*Gavia* apud Boie, Isis, 1822, p. 563.

*Rissa*, Stephens in Shaw's Gen. Zool. xiii. pt. 1, p. 181 (1825).

*Cheimonia* apud Kaup, Natürl. Syst. p. 84 (1829).

*Laroides* apud C. L. Brehm, Vög. Deutschl. p. 754 (1831).

THIS genus contains only two species:—*Rissa tridactyla*, which inhabits the Palæarctic, Ethiopian, and Nearctic Regions; and *Rissa brevirostris*, which inhabits the North Pacific Ocean from Alaska to Kamtschatka. These birds differ from the species included in the genus *Larus* either in having the hind toe rudimentary or else in lacking it entirely. In habits they do not vary from the true Gulls; and, like them, they build a tolerably bulky nest of seaweeds and grass, which they place on the cliffs, and deposit three eggs, which vary considerably in colour and markings, the ground-colour being greenish white, pale ochreous, or light olivaceous, spotted, and the markings dark brown and purplish grey.

*Rissa tridactyla*, the type of the genus, has the bill rather short, moderately stout, nearly straight, the upper mandible decurved towards the tip, the lower mandible narrower, compressed, the intercrural space long and narrow, the crura erect, convex, their lower outline slightly concave, forming a slight prominence at the commissure; nostrils median, linear, oblong, covered above and behind with a sloping, convex, thin-edged plate; wings long, pointed, the first quill longest, the second nearly as long; tail moderately long, even; legs short, the tibia bare for a short distance, tarsus scutellate; hind toe obsolete, anterior toes moderately long, the interdigital membranes slightly emarginate; claws moderate, compressed, slightly curved, rather acute, that on the middle toe with the inner edge slightly dilated.







P. B. S. 1871

Hartshorn 1871

KITTIWAKE.  
YOUNG.





Harhart imp

KITTIWAKE  
Rissa tridactyla

JG Keulemans del

## RISSA TRIDACTYLA.

(KITTIWAKE.)

- Larus gavia cinerea nævia*, Briss. Orn. vi. p. 185, pl. xvii. fig. 2 (1760).  
*Larus rissa*, Linn. Syst. Nat. i. p. 224 (1766).  
*Larus tridactylus*, Linn. ut suprâ (1766).  
*La mouette tachetée*, Buff. Hist. Nat. Ois. viii. p. 424 (1781).  
*Larus albus*, P. L. S. Müller, Natursystem, Suppl. p. 108 (1776).  
*Larus cinerarius*, O. Fabr. Faun. Grœnl. p. 101 (1780, nec Linn.).  
*Larus riga*, Gmel. Syst. Nat. i. p. 594 (1788).  
*Larus nævius*, Schæff. Mus. Orn. p. 64 (1789).  
*Larus torquatus*, Pall. Zoogr. Rosso-As. ii. p. 328 (1811).  
*Larus gavia*, Pall. tom. cit. p. 329 (1811).  
*Gavia tridactyla* (Linn.), Boie, Isis, 1822, p. 563.  
*Rissa brunnichii*, Steph. in Shaw's Gen. Zool. xiii. pt. i. p. 181 (1825).  
*Cheimonia*, Kaup (*Larus tridactylus*, Linn.), Natürl. Syst. p. 84 (1829).  
*Laroides tridactylus* (L.), C. L. Brehm, Vög. Deutschl. p. 754 (1831).  
*Laroides rissa* (L.), C. L. Brehm, op. cit. p. 755 (1831).  
*Laroides minor*, C. L. Brehm, op. cit. p. 756 (1831).  
*Rissa cinerea*, Eyton, Cat. Brit. B. p. 52 (1836).  
*Rissa tridactyla* (Linn.), G. R. Gray, List of Gen. of B. p. 79 (1840).  
*"Rissa brachyrhynchus*, Gould," Bruch, J. f. Orn. 1853, p. 103, nec Gould.  
*Rissa borealis*, C. L. Brehm, Vogelfang, p. 341 (1855).  
*Rissa minor*, C. L. Brehm, ut suprâ (1855).  
*Rissa gregaria*, C. L. Brehm, ut suprâ (1855).  
*"Rissa niveus*, Pall.," Bruch, J. f. Orn. 1855, p. 285, nec Pall.  
*Rissa kotzebui*, Bp. Consp. Gen. Av. ii. p. 226 (1857).  
*Larus (Rissa) tridactylus* (Linn.), Coues, B. of N.-W. Am. p. 644 (1874).  
*Larus tridactylus*, var. *kotzebui*, Coues, op. cit. p. 646 (1874).  
*Mouette tridactyle*, French; *Gabbiano terragnola*, Italian; *Dreizehen-Meve*, German; *de drieteenige Meeuw*, Dutch; *Rida*, Færoese; *Tattarak*, Greenlandic; *Ritur*, *Ritsa-Skegla*, Icelandic; *Tretaaet-Maage*, *Krykje*, Danish and Norwegian; *Tretåig-Måse*, Swedish.

*Figuræ notabiles.*

- D'Aubenton, Pl. Enl. 253, 387; Werner, Atlas, *Palmipèdes*, pl. 18; Kjærbo. Orn. Dan. taf. 41, Suppl. taf. 23; Fritsch, Vög. Eur. taf. 56. fig. 9; Naumann, Vög. Deutschl. taf. 262; Sundevall, Svensk. Fogl. pl. 49. figs. 4, 5; Gould, B. of Eur. pl. 435; id. B. of G. B. v. pl. 61; Schlegel, Vog. Nederl. pls. 350, 351; Bechst. Orn. Taschenb. pl. 32; Audub. B. of Am. pl. 444.

*Ad. ptil. æst.* capite, collo, corpore subtùs, caudâ et supracaudalibus albis: stragulo toto saturatè cano, scapularibus albo apicatis: remigibus cæruleo-canis nigro conspicuè terminatis, singulis vix albo apicatis: remige externo in pogonio externo nigro: rostro flavo, os intùs et marginibus palpebrarum rubris: iride fuscâ: pedibus olivaceo-nigris.

*Ad. ptil. hiem.* præcedenti similis, sed vertice, occipite et colli lateribus griseo-canis.

*Juv.* maculâ anteoculari et vittâ magnâ auriculari nigricanti-cinereis, collo postico et colli lateribus nigris: tectricibus alarum minoribus, scapularibus et secundariis singulis conspicuè nigro variegatis: remigibus 4 primariis nigris in pogonio interno griseo-albo marginatis, reliquis sicut in adulto picturatis: caudâ et supracaudalibus albis, illâ conspicuè nigro terminatâ: capite et collo reliquis et corpore subtùs albis: rostro et pedibus nigricantibus: iride fuscâ.

*Adult in summer* (Greenland). Head, neck, tail, upper tail-coverts, and entire underparts pure white; entire mantle dark French-grey or gull-blue, some of the scapulars and inner secondaries tipped with white; quills gull-blue, broadly tipped with black, some with a slight white apical tip, the first quill with the outer web black; beak yellow, slightly tinged with orange, red at the gape; iris brown, the edges of the eyelids red. Total length about 16 inches, culmen 1·5, wing 11·2, tail 5·2, tarsus 1·25.

*Adult in winter.* Resembles the adult in summer; but the nape, hind neck, and sides of the neck are washed with grey.

*Young in late summer* (Havre). A blackish grey mark before the eye and a larger patch on the ear-coverts: hind neck blackish, this colour coming round so as to form a partial collar; lesser wing-coverts, scapulars, and shoulder richly variegated with black; first four quills black, broadly margined on the inner web with greyish white, the rest nearly as in the adult; rump and tail white, the latter broadly tipped with black; underparts white; bill blackish; legs greenish black; iris brown.

*Young in down.* Covered with tolerably close down; the underparts white, the back and upper part of the body generally greyish; thighs tinged with grey; bill blackish blue, paler towards the tip, with the oval protuberance white; feet pale lead-blue.

*Young first winter.* Resembles the young above described; but there is less black on the hind neck, and the hind crown and nape are washed with bluish grey.

THE present species is very numerous in the northern portions of both the Old and New World, ranging southward in the winter; but it is very rare in the Mediterranean, and only extends down into the middle States of North America during the winter.

In Great Britain it is very generally distributed, and is found off our coasts at all seasons of the year. It is stated to have bred in Dorsetshire; but Mr. A. G. More says that this statement requires confirmation. According to Mr. Rodd it breeds occasionally in Cornwall; and the Rev. Murray A. Mathew writes to me as follows:—"Next to the Herring-Gull the Kittiwake is the commonest Gull in the south-western counties, and is equally numerous at all times of the year. There is a large breeding-station at Lundy Island, also on some of the granitic cliffs near the Land's End, and at various other places on the southern coasts, the Cob Rock, off Berry Head, affording a home to a small colony, as Lord Lilford has informed me. Great numbers of Gulls follow the shoals of sprats into the muddy bays of the Bristol Channel in the winter

season; and at Weston-super-Mare it is a common amusement with boys to place small jins along the shore baited with broken fish; and in this manner numbers of Gulls are easily captured, Kittiwakes and Brown-headed Gulls being most largely represented among the victims." According to information received from Mr. Cecil Smith "the Kittiwake is common along the Somersetshire coast from autumn to spring, and occasionally occurs inland, but does not breed in the county. In Guernsey and the other Channel Islands it is common at the same time of year; but I cannot find that it breeds there; though I looked for it, especially this summer (1876), both in Guernsey, Sark, and Alderney, I could not see a single bird either at the breeding-stations of the Herring and Lesser Black-backed Gulls or elsewhere." It breeds on the Isle of Man; but whether numerous or not I am unable to say. On the east coast it is numerous in some parts, and breeds in large numbers on Flamborough Head, at the Bass Rock, and, according to Mr. Hancock, on the Pinnacles at the Farne Islands, and on the adjacent cliffs.

In Scotland, according to Mr. Robert Gray (B. of W. of Scotl. p. 478), the Kittiwake is "an extremely common bird on the west coast, where there are many breeding-stations, ranging from the Scaur Rocks, in the Bay of Luce, to the island of Handa, off the coast of Sutherlandshire, on the one hand, and from Barra Head to Suleskeir and Rona on the other. It is abundant during the summer months on Ailsa Craig, and the Mull of Oe in Islay, the island of Rum, where there is an extensive breeding colony, the Shiant Isles, Haskeir Rocks, and St. Kilda. I have nowhere seen greater numbers than in the North Minch at the close of the season, when the breeding-ledges are deserted. Very large flocks then assemble and remain congregated until the weather becomes unseasonable, when they migrate southward. On the shores of the western mainland, however, considerable numbers of Kittiwakes are seen from time to time throughout the winter season frequenting harbours and sheltered bays, and feeding upon garbage which they find floating upon the water. I observed such flocks constantly during the winters of 1866-67-68-69 and '70 in the Firth of Clyde and along the coast of Ayrshire. Mr. Alston informed me that he had been aware of the occurrence of Kittiwakes in Ayrshire in the winter time for some years. Several adult specimens in my own collection were shot near Helensburgh, in Dumbartonshire, in January and February 1867."

In Ireland, according to Thompson, it is a numerous and regular summer visitant, and some are also met with during winter.

Professor Newton says that in Greenland it breeds in both Inspectorates, but more commonly in the southern. It is recorded by Graah from the eastern coast of Greenland, though not observed there by the German Expedition; and Captain Feilden, in his notes made during the late Arctic Expedition, says (Ibis, 1877, p. 409), "I saw a few examples of this species flying over the open water in the vicinity of Port Foulke, 28th July, 1875; but we did not observe it to the northward after entering the ice of Smith Sound; and in 1876 no specimen was seen as the expedition returned south, until the north water of Baffin Bay was reached." According to Professor Newton it is exceedingly common all round the coast of Iceland, arriving in the beginning of March and leaving about the middle of August; and Captain Feilden, in his Notes on the Ornithology of the Færoes, says, "Müller mentions that this bird is seen in winter, though of course not in the same abundance as in the breeding-season, when it is by far the

most numerous of the Sea-Gulls in Færoe. No words of mine can give an adequate conception of the multitudes of these Gulls; they almost rival the Puffins in number. From morn till night they follow the line of coast in never-ending streams, wending their way to and from their breeding-places. I have watched them for hours passing in continuous flocks of thousands alongside the cliffs, each bird with a piece of grass or moss in its bill. On the island of Sandoe are two small lakes, which seemed to be a favourite bathing-place for these birds; the surface of the water was literally white with them, and the narrow valley leading up from the sea to the lakes was thronged with them hurrying to and fro. One of their nesting-places, on the magnificent cliffs of the Great Dimon, is the finest sight of the kind I have seen. A visitor lands on the ledge, only accessible in fine weather, at the base of the cliffs; and then he has to scramble along between the sea and the face of the rock, for about half a mile, before reaching the only spot where it is possible to ascend the island. On one side is the sea dashing against the rocks, looking as if each wave was ready to sweep over the ledge; on the other hand the wall of rock rises perpendicularly to a height of six or seven hundred feet. There the Kittiwakes build in countless myriads, in a vast colony to themselves; the nests commence at a height of twenty or twenty-five feet from the ledge, and then continue without intermission to the top of the cliff. Our visit was made in the height of the laying-season; each nest had an owner seated on it, and generally the mate was perched alongside. By yelling and shouting we managed to make some of the birds near us leave their nests; then the disturbance became general, and the Kittiwakes, tier by tier, left their nests, giving the appearance of a vast white sheet rolling up from the face of the cliff and dissolving into snow. The noise was deafening for a few minutes; but soon the birds settled down on their nests. The Kittiwake is much esteemed for the table, and the inhabitants are constantly shooting them; we ate them and found them tolerable. On one occasion, in the North Isles, I fired four barrels at short range into an enormous flock of them, seated on the water; the result was, twenty-one picked up, to the delight of our crew, who were thus provided with a good supper."

In Norway, Mr. Collett informs me, this species breeds most numerous within the arctic circle, and here and there in small colonies on the coasts of Nordland and Trondhjemstift down to Stat. The largest breeding-places are in Finmark, and are on the larger fjords or on the outer islands, in suitable localities. The largest is Sværholtklubben, between the Porsanger and Laxe fjords. In that steep cliff, about 800 feet high and equally wide, every available inch of room is made use of, and the number of individuals must amount to millions; and I can well believe that in no other place is so large a number collected in so small an area. "The most northern colonies in Finmark are found on the Stappen 'Fuglevær,' close to the North Cape, and on Sværholtklubben. When I visited the former locality, June 26th, 1872, the nests contained eggs, slightly incubated, however, and half-fledged young. The nests, composed of clay and stalks of grass, are built on the very walls of the perpendicular rocks, or on narrow ledges sparsely covered with herbage; the sides of the nests were quite saturated with the droppings of the birds. Attached to the toppling crags, they project like the nests of Swallows over the skerries beneath; some, however, are located so low as to be frequently wetted by the spray. The approach of this interesting breeding-haunt was in a high degree unsavoury from the vast accumulation of guano, and from the number of rotten eggs and half-decomposed bodies of

young birds, with which the rocks are thickly covered at this season of the year. The cliffs adjacent, on which the birds are as thick as snowflakes in winter, while the air is darkened with their masses, and rings with screams from innumerable throats, presented an imposing sight." In Sweden, Nilson says, it appears on the Bohuslän coasts in October, and remains there all winter until March or April. In Skåne it is met with now and again, and in mild seasons comes inland to the ploughed fields. Several individuals were shot at Lund in the winter of 1848-49; and in the winter and spring of 1854 it was not uncommon in Southern Skåne. According to Dr. Palmén it is of rare occurrence on the west coast of Finland. Fellman records it from Kemi, Kuusamo, and Kalix; but this statement has not been confirmed. A. von Nordmann shot an immature bird on Enskär, near Helsingfors, on the 30th May 1857.

In the Arctic ocean the present species is very common in many localities, especially in Spitzbergen and Novaya Zemlya. Professor Newton says (Ibis, 1865, p. 508) that "it appears to frequent the whole of the Spitzbergen coast. In Parry's expedition it was observed feeding on *Merlangus polaris* and *Alpheus polaris* as far to the northward as they reached—lat. 82° 45' N." Dr. Malmgren also writes (J. f. O. 1863, p. 375) as follows:—"Of all the Gulls inhabiting Spitzbergen this species is mostly found on the water, feeding on small fish, Crustacea, Pteropoda, &c. I saw innumerable flocks of old and young birds collected in the straits between Amsterdam Island and Danes Island during the first days of September. They were all swimming against the wind and busily engaged in picking up something from the water, which, after having killed several of them, I found to be *Limacina arctica*. Their stomachs were filled with these animals. This species does not feed on carrion or blubber like *Larus glaucus* and *Larus eburneus*, and therefore is never found at fish-curing places. This fact may account for this Gull and not the two other species being exposed to the persecutions of *Lestrus parasitica*." According to Von Heuglin the Kittiwake is very plentiful on the west coast of Novaya Zemlya, but does not occur in Matthews Straits or on Waigats Island.

In the North Baltic, as above stated, this Gull is of uncommon occurrence; but on the German coasts it is frequently met with in the winter season; and at the same season it occurs in Denmark, but appears to be rare rather than otherwise. Mr. Collin states that it is said to breed on Christiansö, near Bornholm. On the coasts of the German Ocean it is a tolerably regular winter visitant; and Professor Schlegel says that it occurs in small flocks on the Dutch coast during stormy weather, occasionally as early as September, but usually in the winter. Occasionally it is met with inland, being doubtless driven in by stress of weather. It is met with on passage on the Scheldt; and after stormy weather it appears on the lakes and rivers of the interior of Belgium, straggling even to the Moselle. On the northern coasts of France it is common in autumn, occasionally visiting the marshes in the interior, and in the south of France it is not uncommon from December to February. Professor Barboza du Bocage speaks of it as being common on the Tejo, in Portugal; and it is said to be abundant in winter outside the Straits of Gibraltar, being in some seasons, Colonel Irby writes, very numerous in the Bay of Gibraltar, and but rare in others, according to the state of the weather. To the eastward of this it becomes scarcer in the Mediterranean. In Italy its appearances are rare, and it is, so far as can be ascertained, scarcely ever seen except in the northern provinces; for Salvadori doubts the records of its occurrence in Sicily and Sardinia. It has certainly, however, been found in

Malta; for Schembri records the capture of one in January 1843, and Mr. C. A. Wright writes (Ibis, 1874, p. 238) as follows:—"My friend Mr. Medlycott shot one of these birds in the Marsamuscetto Harbour on the 22nd February 1873; and I examined the specimen before he sent it to be skinned. It is one of our rarest Gulls, but, I dare say, gets often overlooked in a flock of the Adriatic Gull, one of which he killed with the other barrel."

It has occasionally been met with in Southern Germany; and Dr. Fritsch says (J. f. O. 1872, p. 374) that it visits Bohemia in winter, but only very rarely. Four were killed near Prague in January 1848; Professor Kazbunda obtained one near Jicin in 1865; and one, probably a weak bird left behind during passage, was obtained by Mr. Hromadko in May 1844.

In the Eastern Mediterranean it is an extremely rare bird; but Von Nordmann cites one occurrence near Odessa, in the Black Sea; and Heuglin states that it is occasionally seen off the coast of Egypt in winter, though not every year.

According to Loche it occurs in Algeria in winter; and Favier says that off Tangier it is nearly as common as the Herring-Gull from November to March. Mr. Godman records it from the Azores, Madeira, and Canaries, and says:—"There were a few Kittiwakes about the harbour of Ponta Delgada when I first arrived; but I did not see them elsewhere. The master of one of the fruit-schooners told me that this and the next species (*Larus argentatus*) frequently followed their vessels for the whole of the voyage from England. I do not know that it breeds in the Azores." He adds (Ibis, 1872, p. 222) that it probably breeds about the coasts in Teneriffe, and he saw either this species or *Larus canus* there in May. According to Dr. C. Bolle (J. f. O. 1857, p. 341) the Kittiwake "accompanies in winter the steamers from the coasts of England to those of the Canaries. The 'Retriever,' by which I went from Plymouth to Santa Cruz, in February, was always surrounded by a small number of these Gulls. I still perceived them late in the afternoon of the 25th of February, twenty-four hours after we had left Madeira. I arrived at my destination at daybreak on the 26th February, and I do not know if the Gulls followed the ship to the Gambia. At any rate those parts of Africa are visited in winter by *Larus tridactylus*, as there is a specimen from Senegal in the Berlin Museum. Probably it occurs every winter about the Canaries." In Asia it is of rare occurrence. Eichwald and Ménériés found it on the Caspian, where, however, it is uncommon; but it does not occur on the coasts of India, China, or Japan.

In America it is found both on the Atlantic and Pacific coasts. Sir John Richardson says that it abounds in the interior of the fur-countries on the coasts of the Pacific, and also on the shores of the Arctic seas, where it breeds. The young appear in considerable numbers in the autumn on the coasts of Hudson's Bay. In the autumn and winter it is common in the Bay of Fundy, and occurs in winter down into the middle United States.

In habits the Kittiwake is essentially an ocean bird, frequenting maritime cliffs during the breeding-season, and the true ocean during the winter. It is very seldom seen inland, except when driven in by stress of weather; but I have shot one in a ploughed field in the centre of Yorkshire. It feeds on small fishes, crustacea, and other marine animals, which it usually obtains from the surface of the water, over which it hovers with elevated wings when picking up its food. It seldom walks, owing to the shortness of its legs, and rests either standing or lying down. It is a very unsuspecting, harmless bird, and when at its breeding-station may be

shot with ease; for when one is shot and falls on the water the rest hover screaming over it, and may be shot one after the other.

It breeds on lofty cliffs, usually, however, selecting the lower parts below the Auks and Guillemots. The nests are rather bulky, constructed of sea-weeds and grasses, and are placed on the narrow shelves and projections of the cliffs. The eggs, two or three, but rarely four, in number, are pale ochreous grey, ochreous white with an olivaceous tinge, or pale greenish olivaceous in colour clouded and spotted with pale purplish grey and dark brown, and vary in size from  $2\frac{2}{40}$  by  $1\frac{21}{40}$  to  $2\frac{6}{40}$  by  $1\frac{25}{40}$  inch.

The specimens figured are—on the first Plate an old bird in summer dress with an adult in winter plumage in the background, and on the second Plate a young bird in the early autumn and a young bird in down.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, *ad.* English coast. *b*, ♂ *ad.* Greenland (*Erichsen*). *c*, *juv.* Lichtenfels, Greenland, August 20th, 1873 (*Starck*). *d*, *ad.* Lichtenfels, July 25th, 1874 (*Starck*). *e*. Musquash, New Brunswick, winter of 1864 (*A. R. Dresser*). *f*, *pull.* North Cape, June 26th, 1872 (*R. Collett*).

*E Mus. Howard Saunders.*

*a*, ♂ *ad.* Orkney, June 1871 (*Dunn*). *b*, *ad.* Labrador (*Möschler*). *c*, ♂ *ad.* South Greenland, August 22nd, 1871 (*O. Finsch*). *d*, *juv.* Brighton, September 1866 (*Harting*). *e*, *juv.* Dogger Bank, January 1870. *f*, *juv.* Greenland, August and September (*Capt. Walker*, "*Eric*"). *g*, *ad.* Tangier, November 1871 (*Olcese*). *h*, *i*, *pull.* Lundy Island and Orkney, July.

*E Mus. E. Hargitt.*

*a*, ♂. Havre, May 11th, 1873 (*Pluche*). *b*, *juv.* Havre, December 21st, 1872 (*Pluche*).



Subfamily *STERCORARINÆ*.Genus *STERCORARIUS*.

*Stercorarius*, Brisson, Orn. vi. p. 150 (1760).

*Larus* apud Linnæus, Syst. Nat. i. p. 226 (1766).

*Cataracta* apud Fabricius, Faun. Grœnl. p. 103 (1780).

*Catarractes* apud Pallas, Zoogr. Rosso-As. ii. p. 309 (1811).

*Lestris* apud Illiger, Prodrômus, p. 273 (1811).

*Megalestria* apud Bonaparte, Cat. Parzud. p. 11 (1856).

*Buphagus* apud Coues, Proc. Acad. Nat. Sc. Philad. 1863, p. 125 (ex Moehring).

ALTHOUGH allied to the Gulls, the Skuas differ sufficiently to justify their being placed in a distinct subfamily. They inhabit the northern and southern portions of the globe, breeding in the far north of both the Old and the New World, and also in the Antarctic regions, but wandering tolerably far from their summer haunts in the autumn and winter. They differ materially from the Gulls in their habits, being bold and predatory, and gain their livelihood chiefly by levying black mail on their weaker neighbours; for they make a practice of attacking the Gulls and Terns and forcing them to give up the food they have obtained, on which they immediately pounce. They swim and fly like the Gulls; but their flight is more powerful and vigorous. They not only devour fishes, but will also eat small mammals, the young and eggs of other birds; and the smaller species are said to eat insects, small crustaceans, and even berries. They either make a nest of seaweed and grass, or else only make use of a depression in the moss, and deposit pale olivaceous or olivaceous-brown eggs blotched and spotted with dark brown.

*Stercorarius parasiticus*, the type of the genus, has the bill shorter than the head, rather broader than high at the base, compressed towards the end, the upper mandible cerate, the tip strongly hooked; nostrils linear, oblong, in about the centre of the bill; lower mandible with the crura broad, the angle somewhat prominent, the tip compressed; wings long, pointed, the first quill longest; tail moderately long, rounded, except the two central feathers, which are much elongated; feet moderate, strong, the tibia bare for a short distance; tarsus rather slender, scutellate; hind toe small; anterior toes moderately long, joined by webs; claws strong, curved, acute, that on the middle toe with the inner edge slightly dilated.







COMMON SKUA.  
STERCORARIUS CATARRHACTES.

## STERCORARIUS CATARRHACTES.

(COMMON SKUA.)

- Larus fuscus*, Brisson, Orn. vi. p. 165 (1760).  
*Catharacta skua*, Brünn. Orn. Bor. p. 33 (1764).  
*Larus catarractes*, Linn. Syst. Nat. i. p. 226 (1766, ex Brünn.).  
*Catharacta skua*, Retz. Faun. Suec. p. 161. no. 123 (1800).  
*Catarractes skua*, Pall. Zoog. Rosso-As. ii. p. 309 (1811).  
*Lestris catharractes*, Illiger, Prodrum, p. 273 (1811).  
*Lestris catarractes* (L.), Temm. Man. d'Orn. p. 511 (1815).  
*Catarracta fusca*, Leach, Syst. Cat. M. & B. Brit. Mus. p. 40 (1816).  
*Stercorarius catarrhactes* (L.), Vieill. Nouv. Dict. xxxii. p. 154 (1819).  
*Catarractes vulgaris*, Fleming, Brit. Animals, p. 137 (1828).  
*Lestris catarractes* (L.), C. L. Brehm, Vög. Deutschl. p. 715 (1831).  
*Lestris skua* (Retz.), C. L. Brehm, op. cit. p. 716 (1831).  
*Stercorarius pomarinus*, Vieill. Galerie des Ois. p. 220 (1834).  
*Megalestria catarrhactes* (L.), Bp. Cat. Parzud. p. 11 (1856).  
*Buphagus skua* (Retz.), Coues, Proc. Acad. Nat. Sc. Philad. 1863, p. 125.

*Skua*, Bonxie, English; *Labbe cataracte*, French; *grosse Raubmöve*, German; *groote Jager*, Dutch; *Stor-Kjove*, Danish; *Skuir*, Færoese; *Hakalla-skúmur*, Icelandic; *Skua*, Norwegian.

*Figuræ notabiles.*

Werner, Atlas, *Palmipèdes*, pl. 21; Kjærbo. Orn. Dan. taf. xliii.; Fritsch, Vög. Eur. taf. 58. fig. 7; Naumann, Vög. Deutschl. taf. 270; Sundevall, Svensk. Fogl. pl. 79. fig. 3; Gould, B. of Eur. pl. 439; id. B. of G. Brit. v. pl. 78; Schlegel, Vog. Nederl. pl. 334; Vieill. Gal. Ois. pl. 288; Elliot, B. N. Am. ii. pl. 56.

♂ *ad.* corpore suprâ saturatè fusco, pileo saturatiore, nuchæ et colli postici plumis lanceolatis et centraliter ochraceo striatis: dorsi plumis ferrugineo et ochrascenti-ferrugineo notatis: uropygio et supracaudalibus fere omnino saturatè fuscis: remigibus nigro-fuscis, primariis ad basin albis: tectricibus alarum saturatè fuscis, ferrugineo notatis: caudâ nigro-fuscâ, ad basin albo notatâ, rectricibus centralibus vix elongatis: corpore subtùs fusco vix ferrugineo tincto, gutturis plumis centraliter ochraceo striatis, hypochondriis vix ferrugineo lavatis: rostro nigro, ad basin pallidiore: iride fuscâ: pedibus nigris vix plumbeo tinctis.

♀ *haud a mare distinguenda.*

*Adult Male* (Færoes). General coloration dark brown, marked with yellowish red; crown dark, almost uniform brown, upper parts dark brown, the feathers with rusty red or yellowish rusty tips, those on the hind neck with yellowish shaft-markings; rump and upper tail-coverts almost uniform dark brown;

quills blackish brown, primaries white on the basal half, the white extending less on the outer than on the inner web, but forming a tolerably conspicuous alar patch; wing-coverts blackish brown, slightly marked with rust-colour on the edge of the wing; tail blackish brown, marked with white at the extreme base, the central rectrices extending nearly an inch beyond the outer ones; underparts dark brown, with a rufous tinge on the abdomen, feathers on the throat with yellowish shaft-markings; flanks slightly marked with rufous; bill black, lighter towards the base; iris dark brown; feet black, with a bluish grey tinge. Total length about 22 inches, culmen 2·4, gape 2·65, wing 15·6, tail 7·0, tarsus 2·7.

*Female.* Similar to the male.

*Young* (Yorkshire coast). Resembles the old bird, but is more profusely marked, especially on the head and neck, with yellowish or rusty yellow, and the upper wing-coverts are variegated with rusty red; the tail is lighter, conspicuously white on the basal portion, and the white on the wings covers a somewhat larger area.

*Nestling.* Covered with soft, close, uniform brownish or cinnamon-grey down, rather darker in colour on the upper parts than on the under surface of the body.

*Obs.* Like all the Skuas the present species has a dark, almost uniform, sooty brown stage of plumage; but whether this is a variety or melanism, or whether the dress of the very old bird, it is impossible to say. I lean, however, to the opinion that it is a sort of melanism, irrespective of age or sex, such as one sees in many of the true birds of prey. I am indebted to Mr. J. H. Gurney, jun., for the loan of a very fine specimen in this stage of plumage, which I have figured in the foreground of my Plate, this dress having been, so far as I can ascertain, but little noticed in the present species. This specimen has the upper parts deep sooty blackish brown, rather paler on the head and neck, the latter having only a few, almost obsolete, yellowish grey shaft-markings; wings and tail blackish brown, the white at the base of the feathers not much developed; underparts uniform dark sooty brown, the under tail-coverts rather darker than the rest of the underparts.

THE range of this, the largest of the Skuas, is comparatively restricted; for it is only met with in the northern portions of the Atlantic and North Sea, and straggles rarely down to the mainland of Europe, where it is most frequently seen on the west and north-west coasts. In the southern hemisphere it is replaced by a closely allied species, *Stercorarius antarcticus* (Less.), which differs in having a shorter and stouter bill, with a more obtuse tip.

In Great Britain the present species is only known to inhabit the Shetland Isles during the breeding-season; but in the autumn examples are met with off our eastern coast, and specimens have been obtained in various places both on the east and south coasts. I have on several occasions seen it exposed for sale in Leadenhall Market, though in latter years I do not recollect having observed one there. On the west coast it is less frequently met with than on the east side of our island; and, referring to its scarcity on the west coast of Scotland, Mr. R. Gray writes (B. of W. of Scotl. p. 493), "I have not, indeed, seen more than three or four examples during the last twenty years: one was obtained on Loch Nell, near Oban, in the autumn of 1867; and another was found alive in a cornfield near Aberfoyle, on the banks of the Forth, in September 1862." It occurs on the coast of Ireland, but is, Thompson states, but rarely obtained there.

According to Professor Newton it has been twice seen on the south coast of Greenland by Holböll; and in Iceland, he writes (Baring Gould's *Iceland*, App. p. 418), "it is pretty common along the coasts; and occasionally breeds some distance inland. According to Faber it is resident. He names four breeding-places in the south—an island in the Ælfusá, a sandy plain opposite the Vestmanneyjar, and the dunes of Skeiðarásanör and Breiðamerkr. Dr. Krüper saw it in the north in summer time; so that it probably breeds there also."

It is still found in some numbers on the Færoes; but Captain Feilden remarks that it is so persecuted that in the course of another ten years it will scarcely be found breeding there: it arrives about the middle of April, and leaves in October. In Scandinavia it is only of somewhat rare occurrence. Mr. Robert Collett states that it appears now and then on the coast of Norway, but is a rare bird; and though it breeds, yet it is only found nesting very sparingly in the districts north of the arctic circle. Its eggs were taken on the Lofoten Islands in 1865; and single birds have been killed in Nordland and Finmarken, where they were found preying on the eggs and young of the useful sea-birds. Professor Nilsson saw a fresh-killed example in Heligoland in 1816; and in 1867 one was shot at Sværholt, in Ostfinmark. It has, however, not been met with in the Baltic, and has therefore not been recorded from the coasts of Sweden or Finland. Von Baer, however, records it as found on Novaya Zemlya, in Northern Russia, though there appears to be some doubt as to whether this statement is correct; and it appears to have no other claim under which it can be included in the avifauna of Russia.

In Germany it is a rare straggler, though it has been on one or two occasions met with inland. Borggreve writes that it visits the coasts in the winter, but is rare on the mainland. It has occurred several times in Anhalt, once in Westphalia, and once in Silesia. It visits the coasts of Denmark, where it is rare; Kjærbölling states that it was shot at Flensborg in October 1849, and has been also obtained on the Holstein coast. He himself saw one in May 1850 on Hirtsholmen, and watched it for some time through a field-glass. It is not recorded from Belgium, but visits the coast of Holland; and Mr. Labouchere informs me that it has been obtained on inland sheets of water. It is stated to occur on the northern and western coasts of France, but is not recorded from those washed by the Mediterranean. It probably is to be met with off the coast of Portugal; and Mr. Howard Saunders states (*Ibis*, 1871, p. 400) that he observed it outside the Straits of Gibraltar, where, Colonel Irby says (*Orn. Str. Gibr.* p. 217) it occurs regularly, though not commonly, in winter. In the Mediterranean it is of extremely rare occurrence. Mr. A. von Homeyer states (*J. f. O.* 1862, p. 431) that he is certain he saw some flying about between the Balearic Isles and Barcelona; and Mr. C. A. Wright says (*Ibis*, 1864, p. 150) that a specimen shot at the Salini, on the north coast of Malta, came into his possession. It is not, however, recorded from the mainland of Italy, though it has straggled down to Southern Germany. Dr. A. Fritsch writes (*J. f. O.* 1872, p. 376) that a specimen was killed with stones on a pond near Sadova, in Bohemia, in September 1865; and the Ritter von Tschusi-Schmidhofen informs me that a pair in immature plumage were, according to Schwab, killed in September 1851, on a mountain-brook on the Ostrawitza, in Moravia. I do not find any record of its occurrence further to the east than this in Europe; but it is stated by Colonel Irby (*l. c.*) to have occurred on the African coast, a single specimen having been obtained by Favier at Tangier in December 1852. It is included by the various authors on the ornithology of North

America; and Dr. Elliott Coues gives (Key N.A. Birds, p. 309) its range as "Northern America, rare or casual: California;" but Dr. Brewer writes to me that it is "unknown in America west of Greenland." I have not included *Larus keeask*, Lath. (Ind. Orn. ii. p. 818), as a synonym of the present species, as I have some doubt from the description as to whether it can really be referred to the Great Skua; but Dr. Coues puts it in his list of synonyms, because, he says, there is no other large Skua in North America to which it can refer.

The Skua is amongst the Gulls what the true bird of prey is amongst the land birds. Bold and rapacious, it seldom takes the trouble to fish for itself, but dispossesses its weaker and more industrious neighbours of their hard-won spoils. When it observes that a Gull has been successful in catching a fish, it immediately gives chase, and the Gull is compelled to drop the fish, which the Skua will frequently catch before it touches the surface of the water. It not only feeds on fish, but on any carrion that may be cast up on the shore, and on the eggs and young of other sea-birds, and commits great depredations in the breeding-places of many of the Gulls, destroying large numbers of both eggs and young. Hence it is no favourite with the peasants and fishermen who live on the shore. But, on the other hand, it is held in high estimation by the farmers and proprietors on whose lands it breeds; for it is said to defend their flocks from Eagles and other birds of prey.

At its breeding-stations it is fearless to a degree, and will attack any one who trespasses on its domain with the greatest fury. Ravens or the larger birds of prey are soon driven away; and should a dog accompany any one who visits the breeding-places, the Skuas will swoop down and strike at it with such determination as soon to drive it to its master for protection. Mr. Dunn, who visited the breeding-places of this bird in Shetland in 1831, gives (Orn. Guide to Ork. & Shetl. p. 112) the following information respecting its habits:—"I never saw this bird in Orkney; and there are only three places in Shetland where it breeds, viz. Foula, Rona's Hill, and the Island of Unst; in the latter place it is by no means numerous, and is strictly preserved by the landlords on whose property it may have settled, from a supposition that it will defend their flocks from the attacks of the Eagle. That it will attack an Eagle if he approaches their nests is a fact I have witnessed. I once saw a pair completely beat off a large Eagle from their breeding-place on Rona's Hill. The flight of the Skua is more rapid and stronger than that of any other Gull. It is a great favourite with the fishermen, frequently accompanying their boats to the fishing-ground or haaf, which they consider a lucky omen; and in return for its attendance they give it the refuse of the fish which are caught. The Skua Gull does not associate in groups; and it is seldom that more than a pair are seen together. During the breeding-season it is highly courageous, and will strike furiously at, and will even pursue, any one who may happen to approach its nest." I am also indebted to Mr. A. C. Stark, who visited the breeding-place of the Skuas at Foula in 1873, for the following note:—"In the summer of 1873 eleven pair of the Great Skua (*Stercorarius catarrhactes*) were breeding on the summit of the highest hill of Foula, Shetland. Although strictly preserved by the proprietor and inhabitants of the island, this colony does not increase in numbers, the young birds being (according to the account of the islanders) invariably driven off by their parents when they are able to provide for themselves. At the time of my visit (June 19, 1873) most of the Skuas had hatched their eggs about a fortnight. On the approach of an intruder the young run from the

nest with considerable celerity and hide in the surrounding bog. They show their courage at an early age. A young bird, that could not have been hatched more than a few hours (there was still an unhatched egg in the same nest), showed fight in a most plucky manner, biting viciously at my hand when I took it up. For a nest this Skua forms a considerable hollow in the mossy ground; this it lines with a few particles of moss and dry grass. The average size of the nests is 12 inches in diameter by 3 inches in depth. I found a curious variety of the egg; the ground-colour is entirely of a light blue, the only markings a few, almost obsolete, brown spots." Captain Feilden, writing on the breeding-habits of this species in the Færoes, says (B. of the Færoe Isl. p. 43), "the breeding-places now occupied by the Skua in these islands are:—Little Dunon, where two or three pairs nest; Great Dunon, four pairs; on the high ground above the village of Sands, ten pairs; a small colony of two or three pairs nest on the hill of Flatinum, in the Island of Sandoe. To meet with them again one has to go to the north isles; there, on Svinoe, I found some seven pairs nesting on the 7th of June; but, owing to the backwardness of the season, we only found two eggs, and those in separate nests. In Videroe four or five pairs nest on the hill of Mealingsfjald; and I received two eggs from there on the 5th of June, also taken from different nests. In Bordoe they also breed, as I received the eggs from there; but during my stay on that island it was so foggy I never was able to visit their haunts. On the 22nd of May we visited the breeding-place of the Skuas near Sands, in Sandoe, in company with Sysselmand Winther, who informed me that John Wolley visited this place in 1849, and then about forty pairs were nesting; they are now reduced to ten pairs. When we had ascended to the elevated tract where the birds breed, each pair on our approaching their nest came sailing round our heads with vigorous and stately flight, suddenly swooping towards us with the rapidity of an arrow shot from the bow; as we neared the nest the circles became smaller, their darts more rapid, and their harsh tones of anger louder. When we found the nest and touched the eggs their boldness increased, and they dashed at us apparently with every intention of striking; but just at the instant one involuntarily ducked the head to avoid the threatened blow the bird changed its course, though more than once my head was grazed by the outspread pinions. Here the Skuas nested in the moss, which covered many acres between the grey boulder rocks with its green carpeting; the nest, a hole about the size of a soup-plate including the rim, was trodden down to a depth of about four inches, and lined with pieces of moss and a few of the bird's feathers; the birds, however, appear to prepare several nests before they decide on using one.

"We found here six nests with two eggs each, the full complement, and one with a single egg. When we had robbed a nest and placed the eggs in a basket, the birds left off dashing at us, and alighted together on one of the mossy hillocks near at hand, which are their favourite perching-places; these hillocks are covered with their droppings and their castings, which consist of the feathers and small bones of the birds they have devoured. I examined many of them, which were made apparently of Kittiwakes' feathers and bones. I do not suppose they can kill an adult Kittiwake; but, from the constant firing of the inhabitants at this species, there can be no lack of wounded ones about, which fall an easy prey to the Skuas. Before leaving the breeding-place I got permission from the proprietor to shoot a pair, the stomachs of which were full of flesh."

I possess eggs of the common Skua from the Færoes, obtained there by Mr. H. C. Müller. These eggs are dull olive or olive-brown in colour, blotched with dark brown, some being greener and others browner; and in size those in my collection vary from  $2\frac{3}{4}$  by  $1\frac{3}{4}$  inch to  $2\frac{3}{4}$  by 2 inches.

I have not had an opportunity of comparing a series of *Stercorarius antarcticus* with the present species; but Dr. E. Coues, who has done so, states that the difference in the bill, though slight, is constant. This I can well believe, as there is so great a gap between the range of these two Skuas. I may add that Mr. E. L. Layard sent me eggs as those of *Stercorarius antarcticus* which differ greatly from all eggs of the common Skua I have seen.

The specimens figured are a bird from the Færoes in the ordinary immature stage of plumage in the background to the left, and a dark variety from the Yarmouth coast, in the collection of Mr. J. H. Gurney, jun., in the foreground to the right.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂, *b*, ♀ *ad.* Færoes (*A. Benzon*). *c*, *juv.* Yorkshire coast, purchased in Leadenhall Market, October (*H. E. D.*).

*E Mus. J. H. Gurney, jun.*

*a*. Yarmouth, purchased in Leadenhall Market, October 1869 (*J. Gatcombe*). *b*, ♀. Yarmouth. *c*, ♀. Dogger Bank, October 16th, 1868.

*E Mus. Howard Saunders.*

*a*, ♀. Færoes, May 24th. *b*, ♂. Færoes, June 25th. *c*, ♀. Færoes, June 8th. *d*, *pullus*. Færoes, July 8th (*H. C. Müller*).





POMATORHINE SKUA.  
STERCORARIUS POMATORHINUS.

## STERCORARIUS POMATORHINUS.

(POMATORHINE SKUA.)

- Stercorarius striatus*, Briss. Orn. vi. p. 152, pl. 13. fig. 2 (1760).  
*Larus keeask*, Lath. Ind. Orn. p. 818 (1790, partim).  
*Larus parasiticus*, Meyer, Taschenb. d. deutschen Vogelk. ii. p. 490 (1810, nec auctt.).  
*Catarracta parasita*, var. *camtschatica*, Pall. Zoogr. Rosso-As. ii. p. 312 (1811).  
*Lestris pomarinus*, Temm. Man. d'Orn. p. 514 (1815).  
*Stercorarius pomarinus* (Temm.), Vieill. Nouv. Dict. xxxii. p. 158 (1819).  
*Lestris pomarina* (Temm.), Meyer, Taschenb. d. deutschen Vogelk. Zus. und Bericht. p. 210 (1822).  
*Cataractes pomarina* (Temm.), Steph. in Shaw's Gen. Zool. xiii. p. 216 (1826).  
*Lestris sphaeriuros*, C. L. Brehm, Vög. Deutschl. p. 718 (1831).  
*Lestris striatus*, Eyton, Hist. Rar. Brit. B. p. 51 (1836).  
*Catarracta pomarina* (Temm.), Blyth, Journ. As. Soc. Beng. xxviii. p. 416 (1859).  
*Lestris pomerinus* (Temm.), Newton, P. Z. S. 1861, p. 401.  
*Lestris pomarkina*, Preyer, Reise n. Island, p. 417 (1862).  
*Lestris pomatorhinus*, Sclater, Ibis, 1862, p. 297.  
*Stercorarius pomatorhinus*, Newton, Notes Orn. Icel. p. 20 (1863).  
*Stercorarius pomarkinus*, Malmg., fide Newton, Ibis, 1865, p. 510.

*Labbe Pomarin*, French; *Stercorario mezzano*, Italian; *mittlere Raubmewe*, *breitschwänzige Raubmewe*, German; *middelste Jager*, Dutch; *Middel-Kjove*, Danish; *Bredhalet Jo*, Norwegian; *Bredstjertad Labb*, Swedish; *Pomornik srednie*, Russian.

*Figuræ notabiles.*

Kjærb. Orn. Dan. taf. 43; Fritsch, Vög. Eur. taf. 58. figs. 5, 6; Naumann, Vög. Deutschl. taf. 271; Sundevall, Svensk. Fogl. pl. 51. fig. 1; Gould, B. of Eur. pl. 440; id. B. of G. Brit. v. pl. 79; Schlegel, Vog. Nederl. pls. 335, 336; Audub. B. of Am. pl. 451; Wolf & Meyer, Vög. Deutschl. Heft 21.

*Ad.* pileo, nuchâ, loris et capitis lateribus saturatè nigro-fuscis: mento albo: collo toto albo flavo lavato, plumis elongatis et acuminatis: corpore suprâ, alis et caudâ saturatè fuscis, dorso antico vix albido notato: remigibus primariis ad basin et rhachibus albis: rectricibus centralibus elongatis sed non attenuatis: corpore subtùs albo, pectore et hypochondriis nigro-fusco notatis et fasciatis: abdomine imo, crisso et subcaudalibus saturatè fuscis, vix albido notatis: subalaribus saturatè fuscis: rostro obscurè corneo, ad basin cærulescente: pedibus nigricantibus: iride fuscâ.

*Juv.* capite, collo, hypochondriis et dorso saturatè fuscis, albido guttatis et fasciatis: pileo et capitis lateribus

saturationibus: abdomine albo, crisso et subcaudalibus albis vix fusco fasciatis: alis et caudâ ut in adulto picturatis, sed rectricibus centralibus inconspicuè elongatis.

*Adult Male* (Færoes, 1868). Crown, nape, and sides of the head from behind the eye to the base of the bill and below the sides of the lower mandible deep blackish brown; chin white; rest of the neck all round white, tinged with light golden-yellow, the feathers rather elongated and acuminate; entire upper parts (except the hind neck), wings, and tail deep brown, the fore part of the back slightly marked with white; primaries with white shafts, and white on the basal portion of the feather, central rectrices elongated, but not pointed; underparts white, the breast crossed by a band of dark brown markings, and the flanks marked and barred with dark brown; lower abdomen, crissum, and under tail-coverts dark brown, slightly marked with white; under wing-coverts and axillaries dark brown; bill dark horn, bluish at the base; iris brown; legs blackish. Total length about 20 inches, culmen 1·8, wing 13·8, tail 8·75, tarsus 2·0, central rectrices extending 2·7 inches beyond the lateral ones.

*Young* (Flamborough Head). Head, neck, flanks, and back dark brown, barred and mottled with dirty white; crown and sides of the head less marked with white; abdomen white; crissum and under tail-coverts white, slightly barred with dark brown; wings and tail as in the adult, but the central rectrices extend only a little beyond the lateral ones.

*Obs.* An old bird from Labrador, shot in the summer season, has the yellow on the neck brighter than in the bird above described; the back is darker, and has no white markings on the fore part; the band on the breast has almost disappeared; and the crissum and under tail-coverts are deep uniform brown. Another, nearly adult young male, obtained in Leadenhall Market in the flesh, has the upper parts with scarcely any white markings; but the hind neck is dark brown, the fore part of the neck is white, slightly mottled with blackish brown; and the breast and flanks are profusely marked with that colour, the rest of the underparts being as in the adult above described; the sides of the neck are washed with yellow; and the central rectrices are quite as much elongated as in any specimen I have seen. A young bird from Torbay has the underparts much whiter than in the young bird above described, the breast and flanks being only slightly marked with dark brown.

AN inhabitant of the northern portions of Europe, Asia, and America, the present species is only known as a straggler in the central and southern portions; but it has been met with in Africa as far south as Walwich Bay, in North Australia, and, on the American continent, on the coast of New York.

In Great Britain it is met with on the coasts in autumn and winter, usually in immature plumage, and is sometimes not very uncommon on some parts of the coast. Mr. Cecil Smith informs me that he does not believe it is common on the Channel Islands, and that he did not obtain it himself when there. In Somersetshire, he writes, "it is by no means common. I have one specimen, a young bird of the year, which was killed at Minehead some years ago; but besides this I know of very few Somerset specimens, and I have never seen the bird alive on our coast. On the south coast of Devon it is much more numerous, especially about Torquay. About Exmouth, too, I have occasionally seen it chasing the Kittiwakes and making them disgorge their prey." Mr. Gatcombe, in a letter received some time ago, told me that in the autumn of 1874 several were obtained on the coasts of Devon and Cornwall; and it has been met with off the coasts of Hampshire, Sussex, and Kent. On the east coast it does not appear

to be common, but is met with now and again; and Mr. Cordeaux says that immature birds occur every autumn in small numbers in the neighbourhood of Flamborough and along the east coast. According to Mr. J. Hancock, the Pomatorhine Skua is a rare winter visitant on the Northumberland coast; and he possesses several in the first plumage obtained there, as also two in mature dress shot on the Tyne. Two, in the collection of the late Mr. W. Backhouse, were taken off the Durham coast.

In Scotland it occurs more frequently on the eastern than on the western shores. Mr. Robert Gray says that it is frequently seen in the Firth of Forth in autumn and spring, and he has observed it off Dunbar. Sometimes, driven by the wind, they try to cross the country; and one was, he says, caught near Larkhall, in Lanarkshire, on the public road, in a disabled state. It has occurred in the Firth of Clyde, on the Ayrshire coast, in Wigtownshire, Kirkcudbright, and Dumfriesshire in the winter season. Dr. Saxby says (B. of Shetl. p. 356) that he procured the skin of one said to have been shot at Scaa, in Unst, about Christmas 1860, and another was shot by the Rev. Z. Hamilton, in Bressay Sound, a little before Christmas 1862.

In Ireland it is met with occasionally in autumn and winter on various parts of the coasts.

Professor Newton says that it is stated to be the commonest species of Skua in the north of Greenland. It breeds in societies from Bjornenæs, north of Egedesminde, to the northward. Several were killed in Regent Inlet; and it was also seen on the Parry Islands, but more rarely than Richardson's Skua. Captain Feilden informs me that on the recent Arctic Expedition the present species was not observed after the 'Alert' and 'Discovery' entered Smith's Sound; but Ross, when on Parry's fourth voyage, saw one flying past the boats in lat. 82° N. Professor Newton says (*l. c.*) that it occurs in Iceland, but is not common. He saw one at Reykjavik on the 27th April. It is of rare occurrence on the Færoes; and Von Müller only records two instances of its having been met with there, but some years ago he sent me a fine adult bird labelled *L. parasiticus*; and Mr. Saunders also possesses one from there. In Scandinavia it is tolerably common; but Mr. Robert Collett informs me that he knows of no authentic instance of its having bred in Norway, nor did he ever observe it during the breeding-season when in Finmark in 1872, 1874, and 1876, though he sought after it everywhere. In the spring and autumn, however, it occurs on the coasts of Norway, and, though nowhere numerous, is by no means uncommon. Occasionally a few are seen far up in the southern fiords; but these appear to be birds out of their course, and are always in immature dress. In 1837 twelve were shot off Christiania in October; and again in 1875 several were killed in October and November in the same locality and elsewhere on the south coast. Occasionally stragglers are seen on the inland lakes.

Pastor Sommerfelt says that it is found every spring and autumn on the Varangerfiord, and he has seen it in June flying down the Tana valley. The Fell-Laplanders, he adds, state positively that it breeds on the Varanger næsset. Professor Newton writes (*l. c.*) that in June 1855 he and Mr. Simpson observed off Berlevaag, a promontory east of the North Cape, large flocks of this species. On their return afterwards with Mr. Wolley they again saw them. In 1857 Mr. Wolley sought diligently, but unsuccessfully, for their breeding-place in this district. He was led to believe that, in the years when the lemmings swarm in the mountains, they usually breed far in the interior of the country.

Nilsson says that in the late autumn it occurs, though rarely, off the Bohuslän coast, and on the Baltic off the outer fringe of islands which skirt the Swedish coast. It occurs but rarely in Finland. Dr. Palmén says (Finl. Fogl. ii. p. 624) that in November 1848 a young male was captured alive off Ingå, in 1851 one was sent from Porkkala, and one was obtained in Thusby on the 28th October 1861. One is said to be in a collection at Wasa, which was obtained in Laihela, at the mouth of the Toby river; and Von Nordmann speaks of three immature examples from Nyland. It is found not uncommonly in Northern Russia, and has been met with off Archangel; but Messrs. Seebohm and Harvie-Brown did not observe it on the Petchora. Mr. Sabanäeff informs me that he has on several occasions seen it in the summer season in the Jaroslaf Government, and that it certainly breeds there. Bogdanoff states that one was killed in the Sviaschsk district, in the Kazan Government. Either this or another Skua breeds, Mr. Sabanäeff says, in the Kaslinsky Ural.

According to Von Heuglin, the Pomatorhine Skua is by far the commonest species in Novaya Zemlya and on Waigats, and is not unfrequently seen in flocks. It is stated to occur on the coasts of Spitzbergen; and, referring to this, Professor Newton writes (Ibis, 1865, p. 510) as follows:—"As Dr. Malmgren remarks, Scoresby states that he observed two species of Skuas in Spitsbergen; but the name he uses for the less-common kind leaves it doubtful whether he meant the Pomatorhine or the Long-tailed Skua. Ross speaks positively as to a single example having been seen during Parry's voyage. This flew past the boats in lat. 82° N. As I have previously stated, some of our party in August saw a bird in Sassen Bay, which Mr. Wagstaffe, who was present, described to me as having the form of tail which is so unmistakably characteristic of the adult *Stercorarius pomatorhinus*; and when between Bear Island and the Norwegian coast we saw many examples of this species, he recognized them at once as being the same as the bird he had previously told me of. A week or two later Dr. Malmgren, on his passage home, found it equally plentiful in much the same latitude. No specimen, that I am aware of, however, has yet been procured in Spitsbergen."

In Germany it occurs not unfrequently as a straggler. Boeck has obtained it tolerably often; and it has occurred several times in Anhalt, once in Silesia, and once on the Moselle. Naumann says that it has occasionally been met with in Switzerland and in many parts of Germany, as, for instance, on the Rhine, Main, Elbe, Oder, and other rivers flowing northward; so that examples have been shot in Silesia, Saxony, Thüringen, Mark, &c.; and one was picked up dead in Anhalt, half a German mile from his house, on the 13th November, 1837. It occurs now and again on the coasts of Denmark in autumn and winter, and is also met with on the Dutch coast, where, however, it is said to be rare. A few stragglers visit the shores of Belgium during the autumn and winter storms; and, as above stated, it has been obtained on the Moselle. In October 1834 a large number, chiefly young birds, were cast on the coasts of France by a terrible storm. It has occurred rarely in Provence; and M. A. Lacroix says that he possesses a specimen given to him in the flesh by a gunner at Toulouse on the 10th March 1854, and that M. J. Berdoulat has in his collection an immature example caught by himself in a ditch near Muret after a heavy storm. It is, he adds, to be met with during a large portion of the year on the coasts of the department of the Pyrénées Orientales. I have no data respecting its occurrence in Portugal,

where, however, it may probably be met with as a rare straggler; and Mr. Howard Saunders says (*Ibis*, 1871, p. 401) that, according to his experience, at Malaga the present species is the most abundant of the Skuas off the coast of Spain in winter. All the family, he adds, "are well known to the fishermen as 'Cágalo,' a name equivalent to that applied in Northern Europe." According to Bailly, several birds of the year appeared on the Lac de Bourget, in Savoy, in October 1847 and in November 1851, and others were observed at the same time on the Lake of Geneva. Salvadori records occurrences, mostly of young birds, in Piedmont, Lombardy, Venetia, Liguria, Tuscany, and the Emilia, to which Professor Doderlein adds a capture in the Modenese; to Sicily it is also a rare visitor, only two or three instances being known. It has occurred off Malta, but does not appear to have been met with in the Greek archipelago. It has, however, been frequently recorded from Southern Germany; and the Ritter von Tschusi-Schmidhofen, writing to me respecting these, says:—"According to Fritsch, it has often been met with in Bohemia; Von Pelzeln states that a young one was killed at Seefeld, in Lower Austria, in 1824; and it has frequently occurred in Upper Austria. Bruhin says that it has been obtained near Gams, in the Rhine valley, in the Vorarlberg; Freyer states that one was shot in Carinthia, on the Laibacher morass, on the 27th September 1841; and it has been met with singly in Hungary, Siebenbürgen, Galicia, Silesia, and Salzburg."

It does not appear to have been observed off the coasts of Asia Minor and North-east Africa; but Colonel Irby writes that, according to M. Favier, it is found, though very rarely, near Tangier, but he only mentions one specimen obtained, as far back as November 1845. It has, however, been met with on the west coast of Africa; for Captain Shelley obtained it off Fantee, and Andersson shot two examples in Walwich Bay, in lat. 23° S.

In Asia the Pomatorhine Skua is very common on the tundras of Northern Siberia. Von Middendorff says that he found it breeding in great numbers on the tundras of the Taimyr, whereas on the Boganida he only shot one on passage. He first observed it on the 6th June (O. S.); and on the 7th July he found, in lat. 74° N., the first eggs, two in number, which were deposited on the moss without any nest under them. Above 74½° N. lat. he did not see any of these Skuas. On the 22nd August a young example was shot close to the mouth of the Udá. It does not appear to have been met with by either Von Schrenck or Dr. G. Radde; but Dr. Finsch states (*Ibis*, 1877, p. 61) that he met with it between Tschornejar, on the Schtschutschja river, and the Podarata river, which flows into Kara Bay.

It has been obtained as far south on the coasts of Asia as Moulmein, as recorded by Mr. Blyth, who writes (*Ibis*, 1859, p. 464) as follows:—"It will interest you to learn of the capture of a fine adult specimen in the vicinity of Moulmein during last July (lat. 16° 20' N.). This bird was procured by Major S. R. Tickell, who has presented it to the Asiatic Society's Museum, Calcutta. He writes, 'it was picked up, or, rather, I should say, knocked down, by some village boys in a swampy meadow, about five or six miles south of Moulmein. There had been very heavy weather in the bay for some days past; but the singular thing is, that this bird should have ranged so wide from its usual haunts as to come within the influence of our tropical monsoon.'" I may also add that in the collection of Messrs. Salvin and Godman there is a bird

in the first year's plumage, obtained by Mr. Cockerell off Cape York, the northern extremity of Australia.

Of the American continent it inhabits the northern portions, but does not appear to be, generally speaking, common. Messrs. Dall and Bannister did not meet with it in Alaska; but Bernard Ross observed it on the Mackenzie river; and, according to Richardson (Faun. Bor.-Am. ii. p. 429), it is not uncommon in the Arctic seas and northern outlets of Hudson's Bay, where it makes its first appearance in May, coming in from seaward, and retires from the north in winter. On the west side of the continent it is only recorded from the Prybilov islands as a rare visitant; but Mr. Howard Saunders (P. Z. S. 1876, p. 326) believes that a Skua seen by Mr. Gervase F. Mathew at Valparaiso and Coquimbo must have been referable to the present species. On the east side of North America it is not uncommon, occurring off Labrador; and on the coast of Maine it is, Mr. G. A. Boardman informs me, common in the autumn and winter. It is stated to straggle as far south as the State of New York; and Professor Spencer F. Baird, who states that adult birds seldom occur off the coasts of the United States, adds that he obtained a fine old bird at Harrisburgh, in Pennsylvania, which was shot on the Susquehanna, near that town, in September 1839.

In habits the present species does not differ appreciably from its ally Richardson's Skua, and, like that bird, it subsists chiefly by plundering the Terns and smaller Gulls of their hard-earned prey; but it does not disdain carrion, and is said to feed readily on putrid fish and other animal substances cast up by the sea, and will also forage after live fish for itself. In Novaya Zemlya, according to Von Heuglin, it feeds chiefly on lemmings, and watches for them, hovering in the air, pouncing down on them like a Hawk. He further states that he frequently observed it swimming on the water or perched on a lump of ice, and that its call-note is a short harsh call resembling the word *crah*. Von Middendorff compares its call to the cry of distress uttered by a Teal when scared away from her young.

But little is known respecting the nidification of the present species of Skua; and its eggs are extremely rare in collections. Von Middendorff found it breeding on the tundras of Northern Siberia, but gives but meagre details respecting its nidification. The number of eggs deposited is, he says, two; and they are laid in a depression in the moss of the tundra, without any attempt to construct a nest. It also breeds, as above stated, in Northern Greenland; but from there we lack any details as to its habits or mode of nidification. I possess a single egg, obtained through Herr Justitsraad Erichsen, from North Greenland, which is much smaller than the eggs of the Great Skua, though somewhat larger than those of Richardson's Skua, and in general character and markings resembles the eggs of the former species, but is rather less olivaceous and more thickly spotted. In size it measures  $2\frac{1}{4}$  by  $1\frac{3}{4}$  inch.

The specimens figured are the adult and young birds above described, both being in my collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a, ad.* Off Scarborough, October 1857 (*Fox*). *b, ♂* (nearly adult). Leadenhall Market (said to have been shot on the east coast of England), October 16th, 1875 (*H. E. D.*). *c, juv.* Flamborough Head, November 1870 (*H. E. D.*). *d, juv.* Torbay, October 26th, 1871 (*Shopland*). *e, ♂ ad.* Færoes, 1868 (*H. C. Müller*). *f, ♂ ad.* Labrador (*Möschler*).

*E Mus. J. H. Gurney, jun.*

*a, ♀.* Stockton-on-Tees, December 12th, 1867 (*Green*). *h, ♀.* Yarmouth, October 19th, 1870. *c, ♂.* Isle of Wight, November 16th, 1867 (*Gardner*). *d, young.* Shetland, winter 1862 (*Dr. Saxby*).

*E Mus. Howard Saunders.*

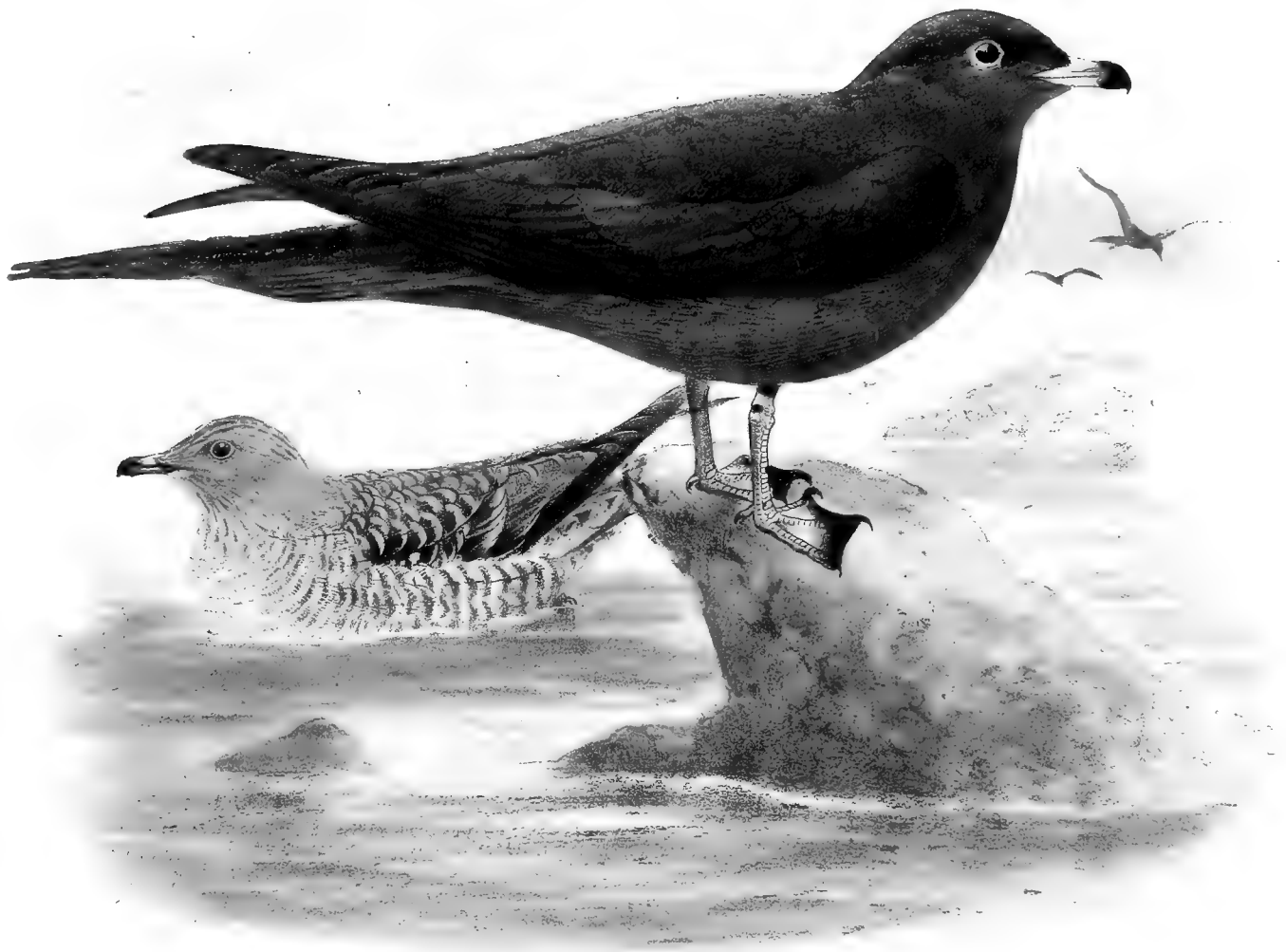
*a, b, ad.* Off Jakobshavn, Greenland, August 6th, 1867 (*E. Whymper*). *c, ♀ ad.* Færoe Islands, August 3rd, 1873 (*Müller*). *d, ♀* (slightly immature). Off Scarborough, October 1857. *e, im.* Fantee, Africa (*Ussher*). *f, im.* Fantee (*Blisset*). *g, im.* Damara Land, S. Africa (*Andersson*). *h, ♀ im.* Yarmouth, November 1870 (*Harting*).

*E Mus. H. B. Tristram.*

*a, juv.* Yorkshire coast, 1868 (*J. H. Gurney, jun.*).







J.G. Keulemans lth.

M & N Hamhart imp.

RICHARDSON'S SKUA.  
YOUNG, AND DARK FORM.





1. BUFFON'S SKUA.  
STERCORARIUS PARASITICUS.

2. RICHARDSON'S SKUA.  
STERCORARIUS CREPIDATUS.

J. G. Keulemans del.

Museum Ross. nup.

## STERCORARIUS CREPIDATUS.

(RICHARDSON'S SKUA.)

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- Stercorarius*, Briss. Orn. vi. p. 150 (1760).  
*Stercorarius striatus*, Briss. tom. cit. p. 152 (1760).  
*The Black-toed Gull*, Penn. Brit. Zool. ii. p. 419, pl. xi. (1768).  
*Larus crepidatus*, Banks in Hawkesw. Voy. ii. p. 15 (1773).  
*Larus cepphus*, O. F. Müll. Zool. Dan. Prodr. p. 21 (1776, ex Brünn.).  
*Le Labbe ou le Stercoraire*, Buff. Hist. Nat. Ois. viii. p. 441 (1781).  
*Larus parasiticus*, Bodd. Tabl. des Pl. Enl. p. 58 (1783, nec Linn.).  
*Stercorarius parasiticus*, Schäf. Mus. Orn. p. 62, pl. 37 (1799, nec Linn.).  
*Lestris crepidatus*, Illiger, Prodr. p. 273 (1811).  
*Catarractes parasita*, Pall. Zoogr. Rosso-As. ii. p. 310 (1811, nec Linn.).  
*Stercorarius crepidatus* (Banks), Vieill. Nouv. Dict. xxxii. p. 155 (1819).  
*Catarractes parasitica*, Flem. Brit. Anim. p. 138 (1828).  
*"Stercorarius cepphus*, Leach," Swains. Faun. Bor.-Am. p. 432 (1831).  
*Lestris richardsoni*, Swains. op. cit. p. 433, pl. 73 (1831).  
*Lestris boji*, C. L. Brehm, Vög. Deutschl. p. 719 (1831).  
*Lestris schleepii*, C. L. Brehm, op. cit. p. 720 (1831).  
*Lestris benickii*, C. L. Brehm, op. cit. p. 723 (1831).  
*Lestris parasita*, Keys. & Blas. Wirbelth. Eur. p. 95 (1840).  
*Cataractes richardsoni* (Swains.), Macg. Man. Brit. B. ii. p. 257 (1842).  
*Stercorarius parasiticus*, Gray, Gen. of B. iii. p. 653 (1845, nec Linn.).  
*Lestris spinicaudus*, Hardy, Rev. et Mag. Zool. p. 657 (1854).  
*Lestris parasiticus*, Bp. Consp. Gen. Av. ii. p. 208 (1857, ex Linn.).  
*Lestris coprotheses*, Bp. tom. cit. p. 209 (1857, ex Brünn.).  
*Lestris spinicauda* (Hardy), Bp. tom. cit. p. 210 (1857).  
*Lestris thuliaca*, Preyer, Reise nach Island, p. 418 (1862).  
*Stercorarius richardsoni* (Swains.), Coues, Proc. Phil. Acad. p. 135 (1863).  
*Stercorarius tephtras*, Malmg. J. f. Orn. 1865, p. 392.  
*Stercorarius spinicauda* (Hardy), Layard, B. S. Afr. p. 366 (1867).  
*Lestris parasitus*, Heugl. Ibis, 1872, p. 65.  
*Stercorarius asiaticus*, Hume, Stray Feathers, p. 269 (1873).

*Arctic Gull*, *Boatswain*, *Man-of-war bird*, *Shooie*, English; *Fasgadir*, Gaelic; *Labbe parasite*, French; *Labbo*, Italian; *Schmarotzer-Raubmeve*, *Struntjäger*, *Polarmeve*, German; *de kleine Jager*, Dutch; *Spidshalet Kjove*, Danish; *Tjegvi*, Færoese; *Isingak*, *Meriar-sairsok*, Greenlandic; *Kjoi*, Icelandic; *Tyvjo*, *Rovmaage*, Norwegian; *Spetsstjertad Labb*, Swedish; *Kalapasko*, *Räiskä*, Finnish; *Pomornik tschujeadnui*, Russian.

*Figuræ notabiles.*

Edwards, Nat. Hist. iii. pl. 149; D'Aubenton, Pl. Enl. 991; Kjærbo. Orn. Dan. taf. 43; Naumann, Vög. Deutschl. tafs. 272, 273; Sundevall, Svensk. Fogl. pl. 51. figs. 2, 3; Gould, B. of Eur. pl. 441; id. B. of G. Brit. v. pl. 80; Schlegel, Vog. Nederl. pl. 337; Swains. F. Bor.-Am. pl. 73; Audub. B. of Am. pl. 452.

*Ad. pileo et pilei lateribus nigro-fuscis, fronte pallidiore: mento et collo albis, colli lateribus et collo postico flavido lavatis: corpore suprâ saturatè fusco, dorso cinereo lavato: remigibus nigro-fuscis: caudâ dorso concolori, rectricibus duabus centralibus elongatis et attenuatis: corpore subtùs albo, gutture imo et pectore fusco-cinereo lavatis: crisso et subcaudalibus saturatè fuscis: rostro ad basin plumbeo, versus apicem nigro: iride fuscâ: pedibus nigricantibus.*

*Ad. var. fuliginoso nigro-fuscus cinereo tinctus, remigibus, rectricibus et pileo saturationibus: corpore subtùs pallidiore.*

*Juv. pileo ochraceo, nigro striato: nuchâ et collo postico ochraceis vix fusco notatis: corpore suprâ nigro-fusco, plumis omnibus conspicuè rufescente ochraceo marginatis: remigibus nigro-fuscis, secundariis vix ochraceo apicatis: caudâ ad basin cervino-albidâ, versus apicem nigro-fuscâ: corpore subtùs ochraceo-albido, nigro-fusco fasciato et notato: rostro sicut in adulto colorato: iride fuscâ.*

*Adult Male* (Greenland). Crown and sides of the head to below the eye dark brown, paler on the forehead; chin, upper part of the neck, and hind neck white, washed with yellow on the sides of the neck and hind neck; entire upper parts (excepting the hind neck) deep, almost blackish brown, the interscapular region tinged with grey, and paler in some lights; quills blackish brown, the shafts of the inner quills brownish, and of the outer ones white; tail like the back in colour, the two central rectrices extending about three inches beyond the rest, and gradually tapering to a point; underparts white, the upper part of the breast and lower throat washed with ashy brown; crissum and under tail-coverts dark brown; bill lead-bluish at the base, otherwise blackish; iris dark brown; legs blackish. Total length about 20 inches, culmen 1.5, wing 13.3, tail 8.9, the central rectrices extending 3.1 beyond the lateral ones, tarsus 1.8.

*Adult Female* (Archangel). Undistinguishable from the male in plumage.

*Adult Male* (dark form, Archangel, 10th June). Entire plumage sooty black with a greyish tinge, the crown, wings, and tail darker than the rest of the plumage, and the underparts rather lighter.

*Young* (St. Michael's, N. A.). Crown warm ochreous, striped with blackish; nape and hind neck warm ochreous, almost unmarked; upper parts blackish brown, all the feathers broadly tipped with warm ochreous; quills blackish brown, the secondaries slightly tipped with ochreous; tail buffy white at the base, otherwise blackish brown; underparts ochreous white, irregularly barred and marked with blackish, the flanks strongly barred with blackish, and rather more washed with ochreous; bill as in the adult; iris brown; legs light bluish white; the fore part of the feet leaden black.

*Young in down* (Hoy Island). Covered with sooty blackish-brown down, the underparts rather paler than the upper surface of the body.

*Obs.* The present species is subject to considerable variation in plumage; and these variations are not sexual, but appear to be individual. The usual form appears to be that above described, either with an

ashy brown band across the breast, or else with the underparts down to the vent white; but in some localities the dark brown almost uniformly plumaged bird is not uncommon. In my own collection I have the following forms, viz. :—The ordinary form with the underparts white from Iceland, Greenland, Labrador, N.W. America, and North Russia; the same form with the breast strongly washed with ashy brown from Greenland, the Færoes, and N. America; and the almost uniform brown form from the Færoes, Greenland, Archangel, and North America. One rather interesting specimen from Greenland is passing from the mottled immature dress to the dark brown plumage, being dark brown, except on the sides of the neck, where there are ochreous or yellowish white feathers, and on the wings and underparts there are remains of the light mottled immature plumage. As a rule, it would appear that in more northern latitudes the light-coloured form predominates, whereas in the breeding-places situated further south the dark form is the more numerous. Mr. Dunn (*Orn. Guide to Ork. & Shetl.* p. 115) says, “there is a great variety in the plumage of this bird, which, in my belief, does not depend upon either age or sex. In fact, in several pairs which I procured it was impossible to tell from outward appearance the sex to which each belonged; and that this difference does not depend upon age, is proved by the circumstance of my having frequently taken the full-fledged young birds of a dark brown colour, the parents of which were white-breasted, and, on the contrary, light-coloured young birds from dark-coloured parents; the light-coloured birds, however, are not so numerous as the dark ones. Difference of colour appears to have no effect on their associating together in the breeding-season; they mix indiscriminately. I have seen instances of two of these birds pairing together, the one dark brown the other much lighter with a white breast; two both light brown; and again two both dark brown.” The colour of the legs varies much according to age. In the very young bird they are white with a lead-blue tinge, or pale lead-blue; when a little older they become rather more blue in tinge, and the fore parts of the feet are lead-blackish; and by degrees this latter colour gains ground, until in the old bird the legs are entirely blackish.

THE range of this Skua extends not only over the northern portion of both continents, but it is met with as far south in Africa as the Cape of Good Hope, and in Asia as the coast of Hindustan.

In Great Britain it is not uncommon on different parts of the coast in winter, but only breeds in the northern portions of Scotland. It appears to be somewhat rare on some parts of our south coast; and Mr. Mansel-Pleydell says that it is but seldom seen off the Dorset coast. Mr. Cecil Smith informs me, “it is occasionally met with in Somersetshire, but not so frequently as in the neighbouring county of Devon. I have one killed on the Barnstaple river, about the 19th of October, which, perhaps, may be worth mentioning, as it is in a rather peculiar state of plumage: it is a young bird, but not a very young one, as the two central tail-feathers project nearly as much as in an adult bird; the upper parts are generally brown, with a few much darker feathers appearing here and there; these are apparently new feathers after the moult, and are tipped with light yellowish brown; the underparts are greyish, but there are some darker feathers here as in the upper parts; altogether these darker feathers with their light margins give the bird a very peculiar mottled appearance.” On the east coast it appears to be more frequently met with; and Mr. Cordeaux says that it visits the coast of Yorkshire regularly in the autumn, and is often numerous near Flamborough Head in August, immature birds being more numerous than adult ones. Mr. Hancock also says that it is an autumn and winter visitant to the coasts of Northumberland and Durham, where it is common in September and October. In Scotland, according to Mr. Robert Gray (*B. of W. of Scotl.* p. 496), “it is perhaps the commonest species of Skua throughout Scotland. Its breeding-places, however, are mostly confined to the Outer Hebrides.

The nurseries on some of the islands are frequented by forty or fifty pairs; there are several stations on South Uist, on Stuala Island, Wiay, Benbecula, and North Uist. There are also one or two breeding-places in Lewis." In 1848, Messrs. Baikie and Heddle say, it was very common in Orkney, arriving May and leaving in September, but since then it has decreased considerably; and although they still breed in numbers on Unst, yet, Dr. Saxby states, they are becoming less numerous every year. He adds that he believes they breed in only four of the Shetland Islands, besides Unst, viz. Yell, Fetlar, Noss, and Foula. It is stated by Mr. More to breed in Caithness and Sutherland; but Mr. Harvie-Brown writes that he can find no instance of this species having lately been found nesting in the latter county. Thompson says that it is occasionally met with on the Irish coast, and adds that it has nested near Achil Island on the west coast.

Professor Newton states that this Skua breeds in Greenland, in both Inspectorates, but most commonly in the southern; it was found on the east coast by Graah, but not by the German Expedition; and it was obtained also on the west coast of Davis Strait. It is equally abundant in the Polar Sea as in the latter. In Iceland it is, according to Professor Newton, common enough throughout the island, and breeds even far inland on the moors. Faber says that it arrives about the 25th April, and remains until the end of September. According to Captain Feilden it is most abundant throughout the Færoes, and especially so in Vaagoe and Svinoe. It arrives about the beginning of April, and leaves in October. Mr. Collett states that it is common everywhere along the coast of Norway, but does not penetrate far inland on the southern fiords. In Finmark it is abundant among the outer islands, as also far down in the fiords. In Sweden it breeds chiefly in the northern portions of the coast. Nilsson says that a pair or two are to be met with in the southern portion of the group of islands off Gothenburg, but that in the Baltic it only breeds far north, and is generally met with on the outer islands. Dr. Palmén writes (Finl. Fogl. ii. p. 626) that it is numerous on the coasts of the Arctic Ocean, but, comparatively speaking, rarer on the coasts of the Gulfs of Finland and Bothnia. Messrs. Sahlberg and Malmberg observed it at Deväatoi; Mr. Nylander says that it breeds on Karlö, off Uleåborg; a few are said to nest on Åland; Von Nordmann states that it breeds sparingly in the vicinity of Helsingfors, and Aschan that it nests on Jussarö. On the coasts of the Arctic Ocean it is, as above stated, common almost everywhere. Pastor Sommerfelt says that it breeds in East Finmark, on the coast-line, but not so far inland on the fiords as at Varanger. A pair or two nest annually on Vardö and Svartnæs. Dr. Malmgren says that it is tolerably common on the coasts of Spitzbergen, not even excepting the north coast, and breeds chiefly on the low islets off the coast. He once found a nest on the mainland at Wahlenberg Bay; but otherwise he only found it breeding on the small islands, such as Dépôt Island, Moffen, and Low Island in 80° 20' N. lat. Professor Newton writes (Ibis, 1865, p. 510) as follows:—"This bird is quite as common in Spitsbergen as I have seen it elsewhere, except among the Loffoden Islands. Parry's Expedition met with it on their journey over the ice, but not north of 82° 2' N. Dr. Malmgren found it breeding on the small islets near the coast, and once on the mainland. It was also, he says, very common on Bear Island. I never saw in Spitsbergen an example of the whole-coloured race or variety, on which was founded the *Sterc. richardsoni* of Swainson; and I believe Dr. Malmgren's much greater experience is the same." Von Heuglin did not find

it so numerous about Novaya Zemlya as the Pomatorhine or Buffon's Skuas; but Messrs. Harvie-Brown and Seeböhm met with it commonly on the Petchora; and I have received both the white-breasted and dark varieties from Archangel. Mr. Sabanäeff informs me that it has once been obtained near Moscow on passage, and it occurs on the coasts of the Baltic provinces. Borggreve says that it occurs more frequently on the coasts of Germany than the other species of Skuas. Von Preen states that it occurs almost every spring on the Schwerin lake; and Gloger records it as occurring in Silesia. Occasionally it is met with tolerably far inland; and Dr. Rey remarks that a young bird was shot close to Halle, in Saxony, and two old ones at Loeberitz. Kjaerbölling states that it is met with on the coasts of Denmark, and, though not very common, it is the most numerous of the Skuas, and it is stated to breed there. It occurs now and again on the Dutch coast, and visits the coast of Belgium irregularly after severe, stormy weather, but is rarely seen on the Scheldt or the Rhine. Along the coasts of the north of France it is the most abundant of the family, and has several times been obtained about the mouth of the Rhône and on the shores of Provence. I do not find it recorded from Portugal; but it is met with on the Spanish coast; and Mr. Howard Saunders surmises that there may possibly be some breeding-place along the western shores of France, for both old and very young birds occur at Malaga early in August. Young birds of the year have been obtained in Switzerland; and in Italy it has occurred at intervals along the coasts of the northern provinces, Venetia, Liguria, and Tuscany; but to the south of this I do not find it recorded. It is of very rare occurrence in Southern Germany. Herr von Pelzeln states that there is a specimen in the Vienna Museum which was shot at the Neusiedler lake, in Hungary; and Messrs. Danford and Harvie-Brown write (Ibis, 1875, p. 433) that the present species is included in a list of Transylvanian birds in the collection of Graf Lázár.

I do not find any record of the occurrence of this Skua in Asia Minor or North-east Africa; but Colonel Irby states (Orn. Str. Gibr. p. 216) that it is not uncommon in winter on the Tangier coast, though Favier only mentions one specimen, killed near Tangier in 1844. On the west coast of Africa, however, it ranges as far south as the Cape of Good Hope. Mr. Andersson says that it is not uncommon on many parts of the south-west coast of Africa, and he has often killed it at Walwich Bay. It frequents, he adds, "the innermost shallows and lagoons on the coast, but is not equally abundant throughout the year, apparently retiring from that part of the coast during the breeding-season." Mr. Layard has met with the present species commonly at the Cape of Good Hope from December to February; and Mr. Saunders, who examined a series of examples from the Cape, remarks that almost all were birds of less than a year old.

To the eastward I find the present species of Skua recorded from the coast of Sindh, where, Mr. A. O. Hume states (Stray Feathers, i. p. 268), it is common at sea along the coasts and in the Gulf of Oman; and Mr. Blanford says that it is not rare on the Mekran coast. It occurs in Northern Siberia, for Von Middendorff met with it breeding on the Taimyr and Boganida; but neither Von Schrenck nor Dr. Radde include it as occurring in Eastern Siberia.

On the American coasts Richardson's Skua is tolerably widely distributed. It is met with in the Hudson's-Bay Territory, and appears to be tolerably common on the northern portions of the east coast; but, though Parry is said to have met with it up to 82° 2' N. lat., Captain Feilden informs me that when on the 'Alert,' in the recent Arctic expedition, he never saw this Skua

after entering Smith's Sound. It is said to be numerous off the coast of Labrador; Mr. G. A. Boardman tells me that it is by no means rare off the New-Brunswick coast in winter; and I find it recorded on the coast of the United States down to New York: but it probably ranges much further south; for, according to Mr. Howard Saunders (P. Z. S. 1876, p. 330), two specimens were obtained by Solander in the harbour of Rio de Janeiro. On the west coast of North America it is said to be common in the northern portions. Messrs. Dall and Bannister say that Bischoff obtained it at Kadiak, and that it is common on the Yukon as far up as Nulato; and, according to Mr. H. W. Elliott, it is an infrequent visitor to the Prybilov Islands. Mr. Howard Saunders (*l. c.*) says that Mr. Gervase Mathew, R.N., saw several Skuas at Callao which he believes were attributable to the present species; and he also considers that an example obtained by Mr. Buller at Horonkenua, Wellington, New Zealand, is referable to the present species, and not to Buffon's Skua.

Like the other species of Skuas, the present bird is bold and fearless in its habits, and, to a large extent, subsists on plunder extorted from its less combative neighbours the Terns and smaller Gulls. Exceedingly agile and swift on the wing, it appears to be able to overtake a Tern or Gull with ease, and will follow it with the greatest swiftness as it turns and doubles to evade its pursuer. When hungry it singles out a Tern or Gull that has been peacefully fishing, and resolutely pursues it until the latter, when hard pressed, disgorges its booty, which is caught by the Skua before it reaches the water, and devoured. It then singles out another victim, and thus, pirate-like, forces its weaker neighbours to minister unwillingly to its wants until it is satisfied. Macgillivray, who remarks that it harasses the Tern, the Black-headed Gull, and the Kittiwake, but does not care to attack the Larger or Lesser Black-backed or Herring-Gulls, adds that it "sweeps rapidly along on extended wings, which are considerably curved, like those of the Gulls and Terns, the latter of which it resembles in its mode of flight, although it moves more directly with scarcely perceptible undulations. At times it may be observed flying about at some height in short curves, in the manner of a Hawk. It is then not inspecting the deep below, nor stealing upon its prey, nor pretending to be doing nothing for the purpose of catching the unwary, but, like an idle gentleman, or useless half-pay captain, is merely taking a turn till dinner-time. When approaching a bird at full speed, it flies directly forward, with frequent flaps; and when in pursuit, it turns, ascends, falls, and glides with the most elegant and easy motions. When its object has been attained, it flies off with a less rapid, but steady flight, to renew its attacks. It can neither dive nor plunge; but it swims with ease, and sits lightly on the water, like a Gull. The instinct that enables it to select a bird that has something to spare for its wants is truly surprising. I have never seen it give chase to a Gull or Tern without accomplishing its purpose. One might be induced to think that it watches the birds, and on observing that one has caught a fish attacks it before its food has been well swallowed; but I have seen it come from a distance into the midst of a flock, and select one which it could not previously have noticed. It seldom fails in catching the fish that has been dropped; but yet this sometimes happens; and on such occasions I have seen it pick it up after it had fallen on the water, although at other times it did not attempt to obtain it, possibly because it had sunk beyond its reach."

At its breeding-places Richardson's Skua is extremely bold and daring in the defence of its

offspring, and will fly down close to an intruder, endeavouring to drive him off, besides using every endeavour to decoy him away from the vicinity of its nest. Mr. Dunn (*op. cit.* p. 114) says, "a dog I had with me on my first visit had been so repeatedly and severely struck by this bird, that had he heard one cry, the sound of which from experience he was perfectly familiar with, he would instantly come behind me for protection, and all my efforts to make him hunt again were ineffectual until we had got some distance from the place; another dog I had with me on my second visit, possessing more courage than the former, after feeling the effects of their bills and wings once or twice, and appearing much astonished at such a foe, would watch the bird pouncing at him and spring from the ground to meet the attack; and by this means he escaped many severe blows." The nest of this Skua resembles that of the Black-headed Gull, and is placed on the ground, or on a tuft of heather in open peat bogs; and two eggs are deposited. Like most of the Gulls, this Skua usually nests in larger or smaller colonies. Dr. Saxby says (B. of Shetl. p. 360) that the breeding-grounds are "as often as possible in elevated situations, the grassy tops of high cliffs projecting into the sea being preferred. The nests are upon the ground, and in most cases are rather carelessly constructed, the materials used being moss, short grass, and bits of heather. The eggs are laid during the latter part of May, and, as was said in the case of the Great Skua, are apt to be very much darker in the early part of the season. The most usual kind is a dark olive-green, slightly blotched and spotted with dark brown, measuring two inches four lines by one inch eight lines. I have known an egg three lines longer but of the same breadth—the shorter diameter of an egg being at all times, and for all species, as far as my observations have gone, less liable to variation than the longer. From a number of eggs brought me of this species on the 6th June, I selected the following varieties, viz.:—very pale olive-green, without any marks; olive-brown, so dark that the usual brown marks could with difficulty be seen; greenish stone-colour, marked with brown and grey; clear dark olive-green, marked with olive-brown of several shades; greenish grey, marked with brown and brownish grey. Thus the diversity in the colouring must not be regarded as wholly due to the degree of advancement of the season, all these being quite fresh when brought to me. It may be remarked, by the way, that Shooies' eggs very soon spoil if not blown. I have repeatedly noticed this." Mr. A. W. Johnson, who has visited the breeding-places of this bird in Shetland, writes to me as follows:—"On the 31st May we took on Noss two clutches of two eggs each and one single egg. The birds were extremely abundant here. On the 4th of June we visited Mousa and found eight nests, most of them containing two eggs, nearly all incubated. We also found a few more on the 5th on Noss. The two varieties appear to pair indiscriminately; but the dark birds are more abundant, I should think in the proportion of three to two. Their cry resembles most nearly the mewing of a cat very much prolonged. When alarmed for the safety of their nest they also utter a peculiar indescribable sound, between a hiss and a croak, at the same time fluttering about, sometimes within a few yards of the intruder, endeavouring to lead him to a safe distance from their nest, and then take to flight with what seems to be an exultant scream. Their power of flight is remarkable, and is best observed when a strange bird is pursued by the owners of a nest he has incautiously approached. It is then very beautiful to see the evolutions they perform, now swooping down close to the ground, then rising almost perpendicularly to a considerable height, and then sweeping along with such speed that as they

pass overhead a hissing noise is distinctly heard. Sheep-dogs, and even cattle when wandering near their nests, are assailed with great vigour and driven from the vicinity. The nests are very slight, in some cases consisting merely of the beaten-down grass, or at most of a few bents, and are placed on the open moor. Though the birds breed in colonies, the nests are always a considerable distance apart. It is almost impossible to find their eggs, except by chance, without watching the bird to her nest, which in fine weather is rather a test of patience, as it is necessary to lie in partial concealment until her fears are dissipated, which sometimes takes a considerable time; but in cold or wet weather the birds are very unwilling to leave their eggs, and, if disturbed, soon return. The number of eggs never exceeds two, though a single one was found much incubated."

Eggs of this Skua in my collection vary in ground-colour from light or darker brownish green to greyish green or olivaceous green, and are more or less spotted with deep umber-brown, some having but few spots, whereas others are tolerably profusely spotted with blackish brown; and in almost all there are a few deep-purplish grey shell-markings. In size they vary from  $2\frac{2}{40}$  by  $1\frac{2}{40}$  inch to  $2\frac{3}{40}$  by  $1\frac{5}{40}$  inch, and are ovate-pyriform in shape.

Mr. Collett says (Orn. Norw. p. 114) that "the food of this species varies considerably, according to the season of the year. In the spring and autumn it probably consists to a great extent of fish, which it takes from the Gulls and Terns; in the summer it subsists mainly on insects and sea-fowl eggs. In the stomachs of individuals shot in Nordland and Finmark in June and July I found coleoptera, especially *Elateres* and *Harpali*, and also Tipulidæ; and in others I found, besides insects, fragments of egg-shells; but I seldom discovered any remains of fish. The eggs of the Eider Duck in particular are the objects of their depredations; hence they are everywhere regarded as a noxious bird, the sworn enemy of every 'Ægvær' proprietor. This hungry marauder wages endless war with all other sea-fowl. The Terns, however (*Sterna fluviatilis* and *hirundo*), and *Larus canus* fiercely repel its predatory attacks; and even *Streptilas interpres* will muster up courage for a fight should it venture to encroach upon its territory." In South Africa, where Mr. Layard has had excellent opportunities of watching this bird, it constantly, he says, sits on the water and swims about, hunting for food, and he has shot at it more than once in the act of doing so. The first specimen he shot was out of a flock sitting and swimming in Table Bay.

The adult bird above described is figured on the same Plate with Buffon's Skua; and on a second Plate I have figured the dark form and a young bird in the mottled plumage,—both being the specimens above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Færoes, April 28th, 1874 (*Schlüter*). *b*, *c*, *d* (light form). Greenland (*Erichsen*). *e* (dark form). Greenland. *f* (light form). Öfjord, Iceland, 1871 (*A. Benzon*). *g*, ♀ (light form). Archangel, June 10th, 1874. *h*, ♂ (dark form). Archangel, June 10th, 1874 (*Piottuch*). *i* (light form). Labrador (*Möschler*). *k* (light form). Bay of Fundy (*G. A. Boardman*). *l*, *m* (dark form). N. America (*S. F. Baird*). *n*, juv. St. Michael's, N. America (*S. F. Baird*). *o* (light form). Hudson's-Bay Territory (*Capt. Blakiston*). *p*, pull. Hoy Island, 1867 (*Dunn*).

*E Mus. H. B. Tristram.*

*a*, ♀. Flamborough Head, July 15th, 1867. *b*, *c*. Orkneys (*Dunn*). *d*. Cape of Good Hope (*E. L. Layard*).

*E Mus. Howard Saunders.*

*a*, *b*, ♂ *ad.* Färoe Islands, July 10th. *c*, ♀ *ad.* Färoe Islands, July 11th. *d*, ♀ (dark form). Färoe Islands, June 6th. *e*, ♀. Färoe Islands, September 26th. *f*, ♂. Färoe Islands, June 13th. *g*, ♂. Färoe Islands, August 28th (*S. von Müller*). *h*, ♀ *ad.* Lichtenfels, South Greenland, July 4th, 1871. *i*, *juv.* Atana-kerdluk, Greenland, August 22nd, 1867 (*E. Whymper*). *j*, ♂ (white-breasted), *k*, ♂ (dark-breasted). Malaga, Spain, August 3rd, 1872. *l*, *m*, ♂ *juv.* Malaga, Spain, October 11th and 27th. *n*, *imm.* Damara Land, S. Africa (*Andersson*). *o*, *p*, *q*, *r*, *s*, *t* (mostly immature). Table Bay, S. Africa, November to beginning of March (*Edgar L. Layard*).



## STERCORARIUS PARASITICUS.

(BUFFON'S SKUA.)

- Stercorarius longicaudus*, Briss. Orn. vi. p. 155 (1760).  
*Larus parasiticus*, Linn. Syst. Nat. i. p. 226 (1766).  
*Cataracta parasitica* (L.), Fab. Faun. Groenl. p. 103 (1780).  
*La Labbe à longue queue*, Buff. Hist. Nat. Ois. viii. p. 445 (1781).  
*Catarracta parasitica* (L.), Retz. Faun. Suec. p. 160 (1800).  
*Catarractes parasitica* (L.), Pall. Zoogr. Rosso-As. ii. p. 310 (1811).  
*Lestris parasiticus* (L.), Illiger, Prodr. p. 273 (1811).  
*Stercorarius longicaudus*, Vieill. Nouv. Dict. xxxii. p. 157 (1819).  
*Lestris crepidata*, Brehm & Schill. Beitr. Vogelk. iii. p. 861 (1822).  
*Lestris buffoni*, Boie, Isis, 1822, pp. 562 et 874.  
*Stercorarius cephus*, Steph. in Shaw's Gen. Zool. xiii. i. p. 211, pl. 23. fig. nec desc. (1826).  
*Lestris microrhynchus*, C. L. Brehm, Vög. Deutschl. p. 725 (1831).  
*Lestris cephus* (Steph.), Keys. & Blas. Wirbelth. Eur. p. 95 (1840).  
*Stercorarius longicaudatus*, De Selys, Faun. Belg. p. 156 (1842).  
*Lestris lessoni*, Degl. fide De Selys, op. cit. p. 156 (1842).  
*Stercorarius cephus* (Steph.), G. R. Gray, Gen. of B. iii. p. 653 (1849).  
*Lestris longicaudatus* (De Selys), Thomps. Nat. Hist. Irel. iii. p. 399 (1851).  
*Lestris brachyrhynchus*, C. L. Brehm, Vogelfang, p. 337 (1855).  
*Lestris hardyi*, Bp. Comp. Rend. xlii. p. 770 (1856).  
*Stercorarius buffoni* (Boie), Coues, Proc. Phil. Acad. Sc. 1863, p. 136.  
*Lestris longicaudata* (De Selys), Heugl. Ibis, 1872, p. 65.

*Labbe à longue queue*, French; *kleiner Raubmewe*, *kleiner Struntjäger*, German; *de kleinste Jager*, Dutch; *Spidshalet-Kjove*, Danish; *Tjegvi*, Færoese; *Langhaletjo*, *Fjeldjo*, Norwegian; *Fjell-Labbe*, Swedish; *Tunturi räiskä*, Finnish.

*Figuræ notabiles.*

Edwards, Gleanings, pl. 148; D'Aubenton, Pl. Enl. 762; Kjærb. Orn. Dan. taf. 43; Fritsch, Vög. Eur. taf. 58. fig. 3; Naumann, Vög. Deutschl. taf. 274; Sundevall, Svensk. Fogl. pl. 51. fig. 4; Gould, B. of Eur. pl. 442; id. B. of G. Brit. v. pl. 81; Schlegel, Vog. Nederl. pls. 338, 339; Audub. B. of Am. pl. 452.

♂ *ad.* pileo, nuchâ et capitis lateribus nitidè nigro-fuscis, collo albo lateraliter flavo lavato: corpore suprâ cum tectricibus alarum, scapularibus et secundariis intimis cinereis: remigibus nigro-fuscis, duabus externis rhachibus albis, reliquis rhachibus fusciscentibus: caudâ nigro-fuscâ, rectricibus duabus centralibus valdè elongatis et attenuatis, versus basin cinereis et ad apicem nigro-fuscis: mento, gulâ et pectore superiore albis, gutture flavo tincto, pectore imo sordidè cinereo lavato: abdomine et subcau-

dalibus sordidè et saturatè fusco-cinereis: rostro nigro, versus basin plumbeo: iride fuscâ: pedibus plumbeis, nigro notatis.

♀ *ad.* mari similis sed minor, rectricibus centralibus brevioribus.

*Adult Male* (Vadsö, Finmark, 1st July). Crown, nape, and sides of the head to below the eye deep glossy blackish brown, rather paler towards the forehead; neck white, on the sides washed with yellow; upper parts ashy grey, clearer on the fore part of the back; quills blackish brown, the shafts of the first two white, and of the rest brownish; wing-coverts, innermost secondaries, and scapulars similar in colour to the back; tail blackish brown, the two central feathers much elongated, and tapering nearly to a point, at the base coloured like the back, and gradually darkening into blackish brown towards the tip; chin, throat, and upper breast white, the throat tinged with yellow, the lower breast tinged with dull ashy grey; abdomen and under tail-coverts dull dark ashy with a brown tinge; bill black, except towards the base, where it is lead-bluish; iris dark brown; legs lead-colour, with large patches of black on the feet, covering the larger portion of the foot. Total length about 21 inches, culmen 1.15, wing 11.5, tail 13.0, the central rectrices extending 8.1 beyond the lateral ones, tarsus 1.5.

*Adult Female.* Resembles the male in every respect, except that, as a rule, it is rather smaller in size, and the central rectrices are not so elongated.

*Young.* Differs from the young of *Stercorarius crepidatus* in being much darker, and in colour resembles more the young of *S. pomatorhinus*, though in size it is less than *S. crepidatus*, from which it may always be distinguished by having the shafts of the first two primaries only white; the bill is lead-blue, except at the tip, where it is black; tarsi lead-blue, the feet paler with a large patch of black across the fore part.

*Obs.* The colour of the tarsus and feet appears to vary much according to the age of the bird. Naumann says that the young bird has the legs lead-blue, whitish on the webs of the feet, but that by degrees they grow darker, black coming in patches first on the feet, and then spreading all over until the very old bird has the legs and feet quite black; and Mr. Collett informs me that adult birds he shot had the tarsus plumbeous grey, the tibia and toes black, but the distribution of the black and plumbeous differed in almost all those he examined, and one had a large black spot on the centre of the tarsus.

THIS, the smallest of the four European species of Skuas, inhabits the northern portions of both the Palæarctic and Nearctic Regions, its range being circumpolar. In Great Britain it is known chiefly as a tolerably rare straggler, though it is stated to have bred in Scotland. Mr. A. G. More writes (*Ibis*, 1865, p. 456) as follows:—"Respecting a former breeding-station in Caithness, Mr. R. J. Shearer, of Ulbster Housewick, has favoured me with the following particulars:—'Seven or eight years ago a few pairs of the Long-tailed Skua were always found breeding on the same ground with the commoner species.' This was on a large inland flat, studded with small dark lochs. Besides the two Skuas, the Lesser Black-backed Gull, the common Gull, and the Curlew used to breed on the same spot. In 1860, a pair of Long-tailed Skuas were shot on this ground during the breeding-season; and when Dr. Sinclair, in 1840, published a list of the birds of Caithness, he had found only the Long-tailed Skua, which at that time seemed to be the most numerous, and easily obtained on this breeding-ground.' On revisiting this spot in 1861, Mr. Shearer found that nearly all the Skuas had been destroyed by a gamekeeper, who made a

point of shooting every bird that attempted to breed on the moor. It may be added that Mr. Shearer is perfectly aware of the difference between the Long-tailed and Arctic Skuas, and that he has always been accustomed to distinguish the two species."

It appears to occur somewhat rarely on the south coast of England; for Yarrell does not mention its occurrence there; but Mr. Gatcombe informs me that an adult specimen was obtained at Plymouth some years ago, and is now in the collection of Mr. J. H. Gurney, jun. Mr. Cecil Smith tells me that it is very rarely met with in Somersetshire, and he only knows of two examples obtained there:—one shot at Wellington, quite inland, in October 1862; and one at Stolford, on the coast, in September 1873.

On the east coast it appears to occur more frequently. Mr. J. Cordeaux says that he has met with it at Flamborough in the autumn, but that it is not nearly of such common occurrence as Richardson's Skua. It has occurred on the coast of Northumberland and Durham; and Mr. Robert Gray writes (B. of W. of Scotl. p. 498) that on the mainland of the west of Scotland it is only a straggler, but is probably a regular summer visitant to the outer islands. One was shot in Skye in the autumn of 1855; and he examined a pair shot in the summer of 1863 on the island of Wiay, one of the Outer Hebrides, and thinks it probable that they were breeding there. Mr. Dunn informed Mr. A. G. More that three pairs bred on Holy Island in 1852; and and he also informed Mr. Gray that he found it breeding in the island of Hoy about twenty years ago. In the autumn season, Mr. Gray further writes (*op. cit.* p. 499), "stray birds are found flying along the coasts, but not in any numbers. Two specimens were seen in the autumn of 1866, on the river Kirtle, Dumfriesshire; one of them was shot, and exhibited by Dr. J. A. Smith at a Meeting of the Royal Physical Society, Edinburgh. Another specimen of this Skua, which I had an opportunity of seeing, was shot on the Cree, near Newton Stewart, in 1863. According to a note in MS. by Messrs. Baikie and Heddle, a specimen was shot on Sandy in 1849." In Ireland, Thompson states, it occasionally makes its appearance in autumn on some parts of the coast.

In Greenland it is stated to be tolerably common, but does not appear to breed further south than 70° N. lat. Mr. Benzon informs me that it does not breed commonly in that country, though on the east side of Disco it is by no means rare during the nesting-season. Professor Newton, in his notes on the ornithology of Iceland, says that in 1858 Mr. Wolley and he observed it several times at Kyrkjuvogr, and a very beautiful specimen killed a day or two previously at Keflavik was brought to him on the 10th June. Mr. Preyer saw a skin at Reykjavik in 1860. It has occurred on the Færoes, where Mr. H. C. Müller procured one in June 1860, and another in 1863; and in Scandinavia it is tolerably numerous; and Mr. Robert Collett informs me that it is "tolerably common in Finmark, breeding both on the shores of the fiords and on the extensive marshes in the interior. South of the arctic circle it breeds on the plateaux of Opdal, in the Dovrefjeld, in 62½° N. lat., but is only scarce, and does not breed further south. During passage it occurs rarely on the southern coasts of Norway; and some few are met with in the winter season; but these latter are generally immature birds. In Sweden the present species inhabits the fells, where it is sometimes very numerous, and at others not very common; and Mr. Wolley appears to have found it by no means rare in the portion of Lapland he visited. Dr. Palmén states that in Finland it occurs only on the fells in the high north.

Von Middendorff found it common on the Lapland peninsula up to  $67\frac{1}{2}^{\circ}$  N. lat.; and Messrs. Sahlberg and Malmberg saw it on the tundras near the sea-coast at Deväatoi. Mäklin obtained young and old birds at Enontekis; and Sahlberg observed it in June at Muonioniska. Mr. Sabanäeff does not mention it in the list of birds inhabiting the Ural and Central Russia which he sent to me; but it is found near Archangel, and Messrs. Seebohm and Harvie-Brown inform me that they found the present species in the Petchora river, in Northern Russia, north of the arctic circle. It was generally distributed over the tundras in pairs or small parties; but on one occasion they met with a flock of over a hundred individuals. Dr. Theodor von Heuglin met with it on Novaya Zemlya in flocks and singly, and says that it was tolerably common; and Professor Malmgren found it on the Isfjord, in Spitzbergen, and shot one in Advent Bay. It occasionally visits the shores of Germany, and has been obtained inland; but it is only met with as a rare straggler. Borggreve says that it has occurred on the coasts of the North Sea, on the Rhine, in Anhalt, Mecklenburg, and Silesia, and writes that it "occurs on the coasts of Prussia, Mecklenburg, Holstein, and Friesland, though much less frequently than Richardson's Skua. It has been met with now and again in Silesia, Mark, Saxony, into Central Germany, from West Friesland into the Rhine country, and as far as Switzerland. On one occasion an old bird was obtained at Brienzen, whereas usually only young birds are seen far from the sea; and on two occasions the same has happened in Anhalt." Mr. Alfred Benzon informs me that it is occasionally met with on the west coast of Jutland, whence he has several specimens; and Mr. Gätke has obtained it in Heligoland. Baron von Droste Hülshoff states that he only knows of one instance of its occurrence on the island of Borkum; but it is now and again met with on the coasts of France near Dunkerque, off the Picardy coast, and has occurred near Lille, and off Dieppe. It is stated to have been met with in the Straits of Gibraltar, but is of very rare occurrence in the Mediterranean. Count Salvadori says that he is inclined to refer to the present species a young example in the Turin Museum, obtained near that city, but he is not aware of any other occurrence in Italy. Dr. Anton Fritsch says (J. f. O. 1872, p. 376) that, according to Palliardi, a specimen was killed at Millesen, near Franzensbad, in August 1864, which is the only instance of its occurrence in Southern Germany I find on record.

It has been met with as far south as the African coast; for Colonel Irby says (Orn. Str. Gibr. p. 216) that the present species is recorded by Favier as twice obtained near Tangier—in 1846, and in October 1858, the first being an immature specimen.

In Asia it inhabits the northern portions of Siberia right across to the American continent. Von Middendorff found both the present species and Richardson's Skua breeding on the Taimyr and the Boganida; but the present species was much the less numerous, and was the only one which occurred above  $74\frac{1}{2}^{\circ}$  N. lat. All the Skuas arrived on the Taimyr in  $73\frac{1}{4}^{\circ}$  N. lat. on the 5th June (old style), and were still common on the 4th of September, one being seen as late as the 22nd September. On the 22nd June the present species had eggs; and there were newly hatched young on the 15th July. He mentions that Buffon's Skua was subject to as much and similar variation as the Pomarine Skua on the underparts of the body. On the American continent it is found in the Arctic regions, straggling southward on passage as far as to about  $40^{\circ}$  N. lat. Mr. Elliot, who met with it on the Prybilow Islands, says it is seldom seen there, and he only obtained two specimens. Mr. Bannister speaks of it as being common at St.

Michael's, in Alaska; and Mr. Dall obtained it at the mouth of the Yukon. Captain Blakiston received specimens from Hudson's Bay, where it is also recorded by Mr. Mackenzie. Mr. Ross obtained it on the Mackenzie river; and Sir John Richardson obtained nestlings on Melville Peninsula.

In habits the present species is said to assimilate greatly to its ally, Richardson's Skua. I have never had an opportunity of seeing this bird at its breeding-haunts. The late Mr. Wheelwright, who found it nesting near Quickjock, in Lapland, writes as follows:—"All the Laps with whom I spoke were well acquainted with this bird. We got our first nest on the 3rd of June, and continued to take fresh eggs until the end of the month. I myself never but in one instance saw more than two eggs in a nest. Once I obtained three; and as I have taken a single egg from a nest hard sat-on, it appears that they do not always lay two, which, however, we may take to be the general number. The nest is nothing more than a few pieces of dried hay laid in a hole scratched in the ground, always in the vicinity of water; and I never saw it on a real snow-fell. Although these birds live in colonies, you do not find the nests close together. None breed close to Quickjock; but on the fells about thirty miles to the west they breed in great quantities. No bird is more tame and fearless than this Skua during the time they have eggs; for they come sailing close over your head when searching for the nest, performing the most beautiful airy gyrations, their long sharp wings and pointed tail giving them a singular and pretty appearance when in the air. Their cry is a loud, dismal shriek, '*i-i-i-ah, je-ah, je-oh, je-oh!*' and might be heard day and night over their breeding-place. But as soon as the young are hatched off, their nature seems to be entirely changed; and then they never approach within gunshot, but wisely do not betray the proximity of the young (which always manage to hide themselves very cleverly) by any gestures of anxiety. Of all the specimens which I opened, in the inside of one alone did I ever see the remains of a fell-lemming, and in only one other were there the remains of a small mouse. Their principal food appears to be the common crowberry (*Empetrum nigrum*), a large beetle, and small crustaceans. I never saw any thing except crowberries in the inside of the young ones. The Laps have an idea that they will kill and eat the young Ptarmigan. I have certainly seen a Skua chase an old Ptarmigan; but I fancy this was more from wantonness than any thing else. I could scarcely distinguish the male from the female by the plumage. In one example the long middle tail-feathers measured 13 inches, and extended 9 inches beyond the rest." Mr. Collett informs me that in the stomachs of specimens he obtained and examined he found crowberries, remains of crustaceans and fishes, undamaged shells of *Litorina litorea*; but he adds that he believes that the present species feeds chiefly on lemmings. One, however, shot by him at Höland, near Christiania, on the 28th October, 1873, had its stomach stuffed full of *Lumbrici*. Speaking of its note, he says that it differs materially from that of Richardson's Skua, and resembles some of the notes of the *Hæmatopus*, or of the Jackdaw.

Mr. H. Seebohm, who met with the present species on the Lower Petchora, in Northern Russia, sends me the following note respecting its habits:—"Buffon's Skua was one of those birds which we did not meet with on migration, but observed for the first time in the delta of the Petchora upon our arrival at Alexievka on the 19th June. We generally saw them in small parties of five or six, flying over the island where we were stationed. On the tundra they were

generally in pairs, and often remained for a long time in one spot on the ground. We did not succeed in finding their nest, though we frequently spent hours together in the search for it. Our Samoyede servant informed us that they bred far inland. On one occasion we thought that we had discovered the young in down. It was on the 3rd July. We were strolling over a piece of low marshy ground near the Petchora, on the mainland, when we caught sight of a large flock of Buffon's Skuas in the distance. Just at that moment we rose a pair of Grey Plovers; and Harvie-Brown stopped to watch them, whilst I marched away after the Skuas. We had generally seen these birds hawking like Tern over the tundra in pairs or in little parties. We had found them wild and difficult to approach, and had hitherto only succeeded in shooting very few. As I neared the spot where this large flock were to be seen, I watched them all alight on the ground near the great river. I walked towards them, and soon caught sight of about a score Siberian Herring-Gulls on the ground to the right. Before I had got within a hundred yards of them they rose and flew towards me. The Skuas also rose and followed them. I let the Gulls go by, and took the nearest Skua as soon as he came within range. Fortunately I brought him down. I was now surrounded by about a hundred or a hundred and fifty Buffon's Skuas flying in all directions, generally about ten within shot. This continued for about twenty minutes, during which I shot off all the cartridges I had left, missing of course many birds, but leaving seven killed and wounded on the field. Harvie-Brown then came up and bagged five more, when the birds retired, all except one, which kept continually flying towards one or other of us, every now and then making a downward swoop over our heads like a Tern. We soon discovered the cause of this bird's anxiety—a young Skua in down a day or two old. We searched for nests or eggs, but in vain. We did not shoot the parent bird, as we had already a dozen to carry home. Arrived at our head quarters we discovered that one of the dozen birds was a Richardson's Skua; so that our young in down became unidentified. The Skuas were very noisy, continually making a cry like *hack, hack*, as they flew towards us. They screamed wildly as they flocked together. As soon as our backs were turned they all came back to the same place. Buffon's Skua looks like a great Black Tern on the wing, often hovering in the air like a Kestrel or a Tern, and is in other ways very Tern-like in its habits. We found that the birds we had shot had been feeding upon beetles and cranberries. On the following day we returned to the ground. The large flock had gone; only about a dozen remained. We watched them for an hour, and shot one. I then noticed a Skua making its alarm-note on the ground, as if we were too near its nest. I whistled for Harvie-Brown to come up; and we lay down for an hour about 120 yards apart. The Skua kept flying about from one place to another, seldom remaining long in one locality. It visited one place, however, four times, and rested there longer than at the other places. It never ran about on the ground as the Grey Plover does in similar circumstances. The fourth time it rested on this place Harvie-Brown and I rose together; we followed each his own bearing, and in half a minute crossed each other's track at the nest with two eggs. The bird was not far off, and was shamming lameness to attract our attention. Harvie-Brown took a few strides towards it and shot, not a Buffon's Skua, but, to our surprise and disgust, only a Richardson's Skua. On the 9th July we visited this part of the tundra again and found the large flock of Buffon's Skuas had returned; some were on the moor, and many swimming in the river. At Dovinik we found Buffon's Skua quite as common as Richardson's Skua, and ascertained that it does not confine

itself to beetles and cranberries for food. On the muddy margins of the inland sea I shot a young Dunlin, and broke the wing of an old Dunlin with one barrel, whilst with the second barrel I killed a Little Stint. The cartridge-extractor of my gun was out of order; and it took me some time to reload. The wounded Dunlin ran a few yards, when a couple of Buffon's Skuas came up, quarrelled almost under my nose for the wounded bird, and carried it off before I could struggle through the mud to the rescue. Nearly all the Buffon's Skuas we shot had almost pure white breasts; but in one skin there is a brown collar, reaching from the shoulder to the centre of the breast, on the left side."

The eggs of Buffon's Skua bear a general resemblance to those of Richardson's Skua; but, as a rule, judging from a series in my collection, they are greener in tinge, and appear subject to rather more variation. The ordinary type appears to be olive-green, blotched chiefly towards the larger end with dark brown surface-spots, and more sparingly marked with pale purplish brown shell-markings; but some of the eggs are dull dark olivaceous brown in ground-colour, and others are pale dull greenish. One or two have the markings hieroglyphic-like, almost as if drawn with a thick pen; and in one these markings are collected so as to form a broad wreath round the larger end. In some the surface-markings are much paler than in others. In size they vary from  $1\frac{3}{4}$  by  $1\frac{1}{4}$  inch to  $2\frac{1}{4}$  by  $1\frac{2}{4}$  inch, and are oval in shape, tapering rather abruptly towards the smaller end. Mr. Benzon informs me that he possesses an unspotted variety of the egg of the present species from Sukkertoppen, in Greenland, and one with a single dark blotch from Lapland.

The specimen figured, on the same Plate with the adult Richardson's Skua, is the one above described. I have not deemed it necessary to figure the young bird, as it may always be distinguished by the first two primaries only having white shafts.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Vadsö, Finmark, July 1st, 1875 (*Collett*). *b*, ♀ *ad.* Virihjaur, Lapland, July 5th, 1874 (*Dahlberg*).  
*c*, ♂. Færoes, 1868 (*H. C. Müller*). *d*, ♀ *jun.* Labrador (*Möschler*). *e*, ♂. Greenland (*Erichsen*).  
*f*. St. Michael's, Alaska, May 27th, 1866 (*H. M. Bannister*). *g*, ♂ *ad.* Barren grounds, east of Fort Anderson, Arctic America (*R. R. Macfarlane*).

*E Mus. Howard Saunders.*

*a*, ♂, *b*, ♀. Quickjock, Lapland, June 1866 (*R. Duff*). *c*, ♀ *ad.* Thorshavn, Færoes, June 14th, 1873 (*H. C. Müller*). *d*, *juv.* Orwell, Suffolk, October 1870.



## Order VI. TUBINARES.

### Family PROCELLARIIDÆ.

#### Genus PROCELLARIA.

*Procellaria*, Linnæus, Syst. Nat. i. p. 212 (1766).

*Hydrobates* apud Boie, Isis, 1822, p. 562.

*Thalassidroma* apud Vigors, Zool. Journ. ii. p. 405 (1825).

*Cymochorea* apud Coues, Proc. Nat.-Hist. Soc. Phil. 1864, p. 76.

THE Petrels are essentially wanderers, roaming over the face of the ocean, except during the breeding-season. They inhabit the ocean in most portions of the world, being found in the Palæarctic, Ethiopian, Oriental, Australian, Nearctic, and Neotropical Regions, two species being found in the Western Palæarctic Region. They are extremely strong on the wing, and may often be seen in stormy weather skimming over the surface of the water in mid ocean, patting the surface of the water with their feet. They fly like the smaller Gulls, gliding with extended wings, sailing along at intervals. They feed on fatty substances, small crustaceans, and minute fishes, which they pick up from the surface of the water. They breed on islands close to the sea, their nests being in burrows in the ground or in stone heaps, and deposit a single white egg, either unmarked or else slightly dotted with red. They are to a large extent nocturnal, remaining hidden during the day and sallying out when the shades of evening begin to set in.

*Procellaria pelagica*, the type of the genus, has the bill shorter than the head, slender, compressed, much decurved at the tip, and acute; nostrils dorsal, submedian, opening in front by two approximated tubes; wings very long and narrow, the first quill shorter than the fourth, the second longest; tail moderate, slightly rounded; legs slender, the tibia long and bare for a considerable distance; tarsus long, slender, anteriorly reticulate; hind toe very diminutive; anterior toes long, slender, interdigital membrane emarginate; claws small, curved, compressed, moderately acute.

In the article on these Petrels I have used the generic title *Thalassidroma*; but I have since ascertained that the proper title is *Procellaria*, and therefore the two species found in the Western Palæarctic Region will stand as *Procellaria pelagica* and *Procellaria leucorrhoa*.







LEACH'S PETREL.  
THALASSIDROMA LEUCORRHOEA.

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STORM PETREL.  
THALASSIDROMA PELAGICA

# THALASSIDROMA PELAGICA.

(STORM-PETREL.)

- Procellaria pelagica*, Linn. Syst. Nat. i. p. 212 (1766).  
*Hydrobates pelagica* (L.), Boie, Isis, 1822, p. 562.  
*Thalassidroma pelagica* (L.), Vig. Zool. Journ. ii. 405 (1825).  
*Hydrobates faeroeensis*, C. L. Brehm, Vög. Deutschl. p. 803 (1831).  
*Hydrobates pelagicus* (Boie), C. L. Brehm, tom. cit. p. 804 (1831).  
*Thalassidroma melitensis*, Schembri, Orn. del Gruppo di Malta, p. 118 & pl. (1843).  
*Thalassidroma tenuirostris*, L. Brehm, Naumannia, 1855, p. 296.  
*Thalassidroma minor*, L. Brehm, ut suprâ.  
*Thalassidroma albifasciata*, L. Brehm, ut suprâ.  
*Procellaria lugubris*, Natt., Bp. Consp. Gen. Av. ii. p. 197 (1857).  
*Procellaria melanonyx*, Nilson, fide Bonap. tom. cit. p. 196 (1857).  
*Procellaria melitensis* (Schembri), C. A. Wright, Ibis, 1864, p. 154.

*Amplaig*, Gaelic; *Thalassidrome tempête*, French; *Alma de mestre*, Portuguese; *Uccello delle tempeste*, Rinninuni di mari, Italian; *Cangiu-ta-Filfla*, Maltese; *Schwalben-Sturmvogel*, German; *het Stormvogeltje*, Dutch; *Uveirsfugl*, *Stormsval*, Danish; *Drunquiti*, Færoese; *Stormsval*, Norwegian; *Lilla Stormsvalan*, Swedish; *Drudi*, Icelandic.

## *Figuræ notabiles.*

Werner, Atlas, *Palmipèdes*, pl. 26; Kjærb. Orn. Dan. taf. 51; Fritsch, Vög. Eur. taf. 61. fig. 4; Naumann, Vög. Deutschl. taf. 275. fig. 1; Sundevall, Sv. Fogl. pl. 78. fig. 5; Gould, B. of Eur. pl. 447. fig. 2; id. B. of G. Brit. v. pl. lxxxv.; Schlegel, Vog. Nederl. pl. 330; Audubon, B. of N. Am. pl. 461.

♂ *ad.* fuliginosus, corpore subtùs paullo pallidiore et brunnescentiore: tectricibus alarum medianis vix pallidè brunneo apicatis: remigibus nigricantibus: caudâ nigrâ, ad basin albâ, supracaudalibus albis, nigricante apicatis: crissi lateribus et subcaudalibus lateralibus albis: rostro et pedibus nigris: iride fuscâ.

♀ *mari similis.*

*Adult Male* (Orkneys). Sooty black, darker on the upper parts than on the lower surface of the body, which is rather browner in tinge; median wing-coverts with rather paler tips, which make an indistinct alar band; upper tail-coverts, except at the tips, base of the tail-feathers, sides of the crissum and of the under tail-coverts pure white; tail very slightly rounded, almost square in shape; bill and legs black; iris dark blackish brown. Total length about 5·5 inches, culmen 0·58, wing 4·6, tail 2·15, tarsus 0·9.

*Female.* Undistinguishable from the male.

*Obs.* Specimens from the Mediterranean are undistinguishable from others from the Orkneys and Shetland; but some of the former are, if any thing, a trifle greyer in tinge of colour.

THIS inhabitant of the ocean, appearing only to occur about the land during the breeding-season and when driven in by stress of weather, has a tolerably extensive range, being found throughout the Atlantic Ocean, and having also been met with on the east coast of Africa.

In Great Britain it is tolerably common off the coasts, and breeds in numbers on some of the islands off the coast of Scotland. It has been met with there breeding in all three groups of the western and northern isles, in Skye, according to Mr. R. D. Graham, on Staffa, Iona, and Treshnish; and, according to Mr. Robert Gray, "it is a common species in the Hebrides, and its breeding-places may be said to be numerous around most of the larger islands, such as Skye, Mull, and Islay. Colonies have long existed near Dunvegan, on the Ascrib islands, Canna, Rum, and Eigg, besides numerous other rocks and islands off the mainland, from Cape Wrath to Ardnamurchan, and from that to the Mull of Cantyre. The most southerly breeding-station in the West of Scotland is perhaps Ailsa Craig, where an old bird was caught, and a single egg obtained, by the tacksman in the breeding-season of 1842." It breeds likewise off the English coast; and, according to Mr. A. G. More, Sir W. Jardine has seen small parties of this bird in June off the Isle of Man, where they probably breed. It also breeds on Lundy Island and the Scilly Isles, and, according to Mr. Harting, in the Channel Islands. This gentleman was also informed by Mr. J. H. Gurney that it breeds on small islands off the coast of Pembrokeshire. It only appears on the mainland under stress of weather, when individuals are driven on shore. Mr. Rowe says that one was found alive in a court in Richmond Street, Plymouth, in December 1865, after a gale; and specimens have been obtained on most parts of our coasts at different times after severe weather. In Ireland, according to Thompson (*B. of Irel.* iii. p. 418) it "is to be met with at all seasons about some parts of the coast, and breeds in several of the islets. To begin with its most northerly breeding-haunts, in 1832 we were informed that 'these birds breed in great numbers in Tory Island [off the north-west of Donegal], in the rabbit-holes, like the Puffins; from which circumstance,' the writer adds, 'I have been able to get numbers of them alive:' they scarcely ever approach the mainland. I was told by the late Mr. John Nimmo, of Roundstone, respecting the Galway coast, that a few pair breed in Deer Island, and the adjacent Hards, or Cruagh rocky islets. The nest is situated under stones, and a single egg deposited on the ground."

It has not, so far as I can ascertain, been recorded from Greenland; but Professor Newton, in Baring-Gould's 'Iceland,' says:—"Mohr mentions that he found two persons who knew this bird in Iceland, but could tell him nothing of it. Herr Preyer says that he himself saw it near the Vestmannaeyjar; otherwise I should have hesitated to include it here. It must be of unfrequent occurrence." It is common in the Færoes during the breeding-season, its principal breeding-stations there being, according to Captain Feilden, the northern island of Fugloe and Naalsole, near Thorshavn. Mr. R. Collett says that small flocks are seen in the autumn on the coast of Norway, from the Hvaløerne to Lofoten, and occasionally a straggler penetrates up the fiords. Its occurrence north of Lofoten (60° N. lat.) has not been sufficiently authenticated; and it has not been found breeding on the Scandinavian coasts. In Sweden it is, Professor Nilsson

says, occasionally seen off Bohuslän, in the Cattegat, and on the coast of Skåne; and it is said to have been seen off Bornholm. In Finland it does not appear to have occurred, though Dr. Palmen (Finl. Fogl. ii. p. 632) refers to a bird having been seen off the coast, which, from the description given by the fishermen, was a Petrel of some sort, either the present species or Leach's Petrel. According to Borggreve it is very rarely seen on the coasts of North Germany as a straggler, only occurring inland when driven in by stress of weather. Kjærbölling says that it has on several occasions been obtained in Denmark, and names six instances of its occurrence, besides having himself seen it on the Little Belt and Veilefjord. Professor Schlegel says that it is occasionally blown on to the Dutch coast during severe storms; and Baron von Droste Hülshoff says that a specimen was thrown up by the waves at Borkum, half dead, in the autumn of 1868. Baron de Selys Longchamps says that when the weather is very stormy it is sometimes numerous on the Scheldt, and several specimens have been taken in the interior of Belgium. Messrs. Degland and Gerbe record it as occurring on all the French coasts, and say that it breeds abundantly on many of the islands off Brittany, as well as on those near Marseilles. In Portugal, according to Professor Barboza du Bocage, it is not rare off the coast; and the same appears to be the case as regards Spain. It has been supposed by some naturalists that the Storm-Petrel of the Mediterranean differs from the species found in the north of Europe and America; and Schembri described the Maltese bird as distinct. This view was also favoured by my friend Mr. Howard Saunders, who writes (Ibis, 1869, p. 171) as follows:—"My friend Dr. Angel Guirao also showed me his private collection, containing specimens, taken on the eggs by himself, of a curious variety of *Thalassidroma pelagica*, of a uniform sooty black, without white rump or white on the wings, which breeds plentifully on the Hormigas and other islands just without the entrance to that great inland sea called the Mar Menor, which extends to Carthagenæ." He further writes (Ibis, 1871, p. 401) that "Don Angel Guirao states that they differ from the type, inasmuch as neither the young nor adults ever have the scapulars and secondaries tipped with white. My own note, made after handling his specimens in 1867, merely states no white bar on wings; but my *impression* is, that the white on the rump is less distinct than in more northern example; still I was in such bad health at the time, that I did not give them the attention I should otherwise have done." I have not been able to examine a specimen from the coast of Spain; but, thanks to Mr. C. A. Wright, of Malta, I have lately received seven Storm-Petrels from Filfla, near Malta, which are undistinguishable from British-killed examples; and it is therefore scarcely possible that the Spanish bird can be any thing else but the present species. Mr. A. von Homeyer writes (J. f. O. 1862, p. 433) that it appears to avoid the Balearic Isles altogether, but that it is common on Cabrera and Conjira, where there is open sea. It inhabits the small islands off Sardinia, where it breeds; and, according to Mr. Wright, it is sedentary on Malta, very common on the south side of the island, and breeds at Filfla, where eggs and young may be found in June and July. Malherbe says that it is sometimes seen at Syracuse, and is occasionally caught off Messina during dark nights in the summer, being attracted by the fires lighted by the fishermen at the ends of their boats. Lord Lilford writes (Ibis, 1860, p. 357) that he saw it once in the Ionian Sea, near Paganica, in December 1857. Specimens have been driven far inland in Southern Germany. Von Pelzeln says (Ver. k.-k. zool.-bot. Gesellsch. 1871, p. 727), "one was caught at Vienna on the 10th

October, 1828; and Professor Jeitteles records the capture of one in the Aloisthal, in Moravia, in December 1863." I do not find any record of its occurrence off the Mediterranean coasts of Asia Minor or North-east Africa; but Von Heuglin saw small flocks of Storm-Petrels at Bab-el-Mandeb, which might have been the present species. In North-western Africa it appears to be resident. Major Loche says that it breeds on various rocky islands on the coast of Algeria, and adds that he has found its eggs from the beginning of May till September, and young birds from the end of May to the early part of October. Dr. C. Bolle says (J. f. O. 1855) that it has only once been found on the Canaries; and Mr. E. Vernon Harcourt states (P. Z. S. 1851, p. 146) that it is "a straggler found in Madeira, but Mr. Godman did not obtain it there." It has, however, occurred on the coasts of West Africa, as Mr. R. B. Sharpe (Ibis, 1872, p. 74) records one from Fantee; and Mr. Gurney, in Andersson's 'Birds of Damara Land' (p. 351), says that it "is occasionally seen rather numerously at Walwich Bay, and is quite common off the rest of the south-west coast of Africa." On the east coast of Africa Captain Sperling met with it between the latitudes of Zambesi and Zanzibar, where, he says (Ibis, 1868, p. 293), it replaces *T. melanogaster*. On the American continent it only occurs off the coasts of the Atlantic, and does not appear to have been found breeding on that side of the Atlantic. Bonaparte describes (Compt. Rend. Acad. Sc. 1854, xxxviii. p. 662) a Petrel from the Galapagos under the name of *Procellaria tethys*, as differing from the present species in being smaller and having the upper tail-coverts pure white and not tipped with black.

The Storm-Petrel is strictly an oceanic bird, being usually met with far out at sea; and however far one is from shore one may be accompanied by one or two of these birds, which fly round the stern, appearing to seek shelter from the storm in the lee of the vessel, and every now and then picking up something off the surface of the water. I have often amused myself by throwing out bits of biscuit or small pieces of fat, and watching them pick them up, which they do very gracefully, hovering over the surface with upraised and extended wings, and with their legs hanging down, the feet touching the water. They feed on any fatty substances, small crustacea, and any refuse they can pick up on the surface of the water, as well as minute fishes. Macgillivray, speaking of the habits of this species, says that "in the open ocean they are met with by day as well as by night; but when breeding they are seen in the neighbourhood of their haunts (that is, to the distance of twenty or more miles around) chiefly in the dusk and dawn, and during the day remain concealed in their holes. Stormy weather does not prevent their coming abroad; nor are they less active during calms. When the waves are high and the wind fierce, it is pleasant, even midst the noise of the storm and the heavings of the vessel, to watch the little creatures as they advance against the gale, at the height of scarcely a foot above the surface of the water, which they follow in all its undulations, mounting to the top of the wave, there quivering in the blast, and making good their way by repeated strokes of their long narrow wings, then sliding down the slope, resting a moment in the advancing mass of water, gliding up its side, and again meeting on the summit the force of the rude wind that scatters abroad its foam bells. I have seen them thus advancing, apparently with little labour; and in such cases less effort, I think, must be required than when they have to encounter a gale before it has blown long enough to raise the waves, which afford it partial shelter. Their manner of flying is similar to that of the smaller Gulls; that is, they glide lightly along with extended wings, sailing

or gliding at intervals, and then plying their feathery oars. It is only when picking up their food that, with upraised wings, they hover over the spot, and pat the water with their feet, although many persons have described this as their ordinary mode of progression. In calm weather, when the sea is smooth, they hover, skim, and wheel around, much in the manner of Swallows, though with less velocity."

During the breeding-season the Storm-Petrels are found on the islands which they have selected for the purposes of nidification, and appear to remain during the daytime quietly in their holes, issuing forth in great numbers at night and wandering out to sea. They nest amongst the stones or in holes in the cliffs, their nest being merely a collection of small pieces of the stalks of plants placed in a depression in the ground; and one egg only is deposited. Mr. Robert Gray says that in the Island of Soay, near Iona, they have their holes in soft mud, the entrance-halls of which are about as large as rabbit-burrows. From these other smaller galleries branch off, so that one external aperture serves as a kind of lobby for a number of pairs. When in their holes they utter a chattering sound, which Mr. Hewitson compares to the warbling chatter of the Swallows when fluttering above the chimneys, which sound guides an intruder with tolerable facility to their retreat; but they frequently nest under such large boulders that they are safe from intrusion.

Of the eggs of the present species I have a few series from the Færoes and the islands of the Scotch coast, which in size average  $1\frac{5}{40}$  by  $\frac{34}{40}$  inch, are oval, rather elongated in shape, pure white in colour, having a chalky surface to the shell, and some have a small zone of pale reddish dots round one end.

The specimen figured, on the same Plate with Leach's Petrel, is an adult male from the Orkneys, in my own collection, and is the bird described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Orkneys (*Dunn*). *b*, *c*, ♂. Filfla, Malta, June 5th, 1874 (*C. A. W.*). *c*, pull. Orkney (*Dunn*).

*E Mus. E. Hargitt.*

*a*, ♂. Shetland (*Dunn*). *b*. Havre, November 15th, 1872. *c*, pullus. Orkney, August 3rd, 1869 (*Dunn*).

*E Mus. C. A. Wright.*

*a*. Filfla, Malta, May. *b*, *c*, *d*, *e*, ♂. Filfla, Malta, June 5th, 1874 (*C. A. W.*).



# THALASSIDROMA LEUCORRHOA.

(LEACH'S PETREL.)

*Procellaria leucorhoa*, Vieill. Nouv. Dict. xxv. p. 422 (1817).

*Procellaria leachii*, Temm. Man. d'Orn. ii. p. 812 (1820).

*Hydrobates leachii* (Temm.), Boie, Isis, 1822, p. 562.

*Procellaria bullockii*, Flem. Brit. Anim. p. 136. no. 219 (1828).

?*Procellaria pelagica*, Pall. Zoogr. R. A. ii. p. 316 (1831, nec Linn.).

*Thalassidroma bullockii* (Flem.), Selby, Brit. Orn. ii. p. 537 (1833).

*Thalassidroma leachii*, Bp. Comp. List, p. 64 (1838).

*Cymochorea leucorrhoea* (Vieill.), Coues, Proc. Nat. Hist. Soc. Philad. 1864, p. 76.

*Thalassidroma leucorrhoea* (Vieill.), Degl. & Gerbe, Orn. Eur. ii. p. 387 (1867).

*Thalassidrome cul-blanc*, French; *Der gabelschwänzige Schwalbensturmvoegel*, German; *Petrel de Leach*, Portuguese; *Leachs Stormsval*, Norwegian; *Klykstjertad Stormsval*, Swedish.

## *Figuræ notabiles.*

Werner's Atlas, *Palmipèdes*, pl. 27; Kjærb. Orn. Dan. taf. liv. fig. 9; Fritsch, Vög. Eur. pl. 61. fig. 5; Gould, B. of Eur. pl. 447. fig. 1; id. B. of G. Brit. v. pl. 85; Naumann, Vög. Deutschl. taf. 275. fig. 2; Schlegel, Vog. Nederl. pl. 331; Audubon, B. of Am. pl. 459.

*ad. fuliginoso-nigricanti-brunneus*: capite, pectore et dorso cinereo tinctis: remigibus nigricantibus, secundariis intimis tectribusque alarum majoribus et medianis brunnescenti-griseis, versus apicem grisescenti-albidis: supracaudalibus albis, nonnullis in pogonio externo fuliginoso marginatis et eodem colore apicatis: caudâ bifurcatâ, fuliginoso-nigrâ, subcaudalibus centralibus grisescenti-fuliginosis, lateralibus albis: rostro et pedibus nigris: iride saturatè fuscâ.

*Pull.* ubique lanugine indutus, grisescenti-fuliginosus.

*Adult Male* (Bay of Fundy, May). Head, neck, back, scapulars, and underparts generally, sooty blackish brown, on the head, breast, and back with a greyish tinge, which shows very clearly in some lights; quills and tail brownish black; tail deeply forked; inner secondaries and wing-coverts, excepting the smaller ones, brownish grey, becoming lighter in colour towards the tips of the feathers; upper tail-coverts white, one or two of the central feathers being marked along the outer web and tipped with dull light sooty brown; central under tail-coverts sooty brown, the outer feathers on each side white; bill and feet black; iris dark brown. Total length about 7·5 inches, culmen 0·75, wing 6·0, tail 3·5, tarsus 1·0, bare portion of tibia 0·3.

*Nestling* (Bay of Fundy, May). Covered with long, loose, sooty, blackish grey down, which is so long as to cover every portion of the body, and even the beak, causing it to resemble a long-haired mouse rather than a bird.

THIS Petrel, so essentially a bird of the ocean, has, as may be supposed, a tolerably extensive range, being found in the Atlantic from St. Kilda and the coasts of Labrador, southward on the American coast to Washington, and on our side to Madeira. It likewise occurs on the west coast of North America; but I am unable to trace its precise range in the Pacific. Except during the breeding-season, and when driven in from the ocean by stress of weather, it is rarely to be met with near land; and the various instances on record of its having been obtained in different parts of Europe refer almost invariably to specimens which had been shot or caught after a severe storm of some days' duration. On our English coasts, especially on the western side of our island, it occurs not unfrequently, even in the extreme south. I recollect having seen, at different times during the last fifteen years, several specimens obtained in the south of England, chiefly on the coast of Sussex; and Mr. George Dawson Rowley records the occurrence of several near Brighton (Ibis, 1860, p. 200) as follows:—"The frightful storms in the first week of November last appear to have been, as usual, destructive to the *Laridæ*, but particularly to the Fork-tailed Petrels (*Procellaria leachii*); three specimens were found at or near Seaford—one, November 3rd, by a beach-comber. I saw this in the meat; it was in moult, and had the new black down underneath; its plumage was shabby. November 6th, another was captured alive; and the third, November 8th, also living, by a coast-guard: the two first appeared to have been starved; but the last was in good condition. One was also picked up dead, November 7th, at Eynesbury, near St. Neots, Huntingdonshire. The cause of this mortality I take to be the roughness of the sea, which prevents the Petrels from feeding; and when, weak from fasting, they try to shift their quarters, the wind then overpowers them, and they are dashed against cliffs and rocks. Frequently the plumage of specimens obtained in this manner is quite worn away by attrition, as if the birds had endeavoured to rise above some obstacle, and only succeeded after many efforts." Mr. Cecil Smith informs me that in Somersetshire "it occasionally occurs as a rough-weather straggler in different parts of the county, both on the coast and inland, where it is occasionally found in a state of exhaustion. The last notice I received of such an occurrence was in a note from the Rev. C. G. Anderson, dated December 10th, 1873, in which he says that a Fork-tailed Petrel had been caught by one of his parishioners, last month, at Combwick, near Otterhampton, and was alive, but dying." On the east coast it is much less often met with; but Mr. H. Stevenson sends me the following notes on the occurrences of this species in Norfolk which have been recorded:—"The earliest record of this species in Norfolk is that recorded by Messrs. Paget as picked up dead on the beach at Yarmouth, on December 5th, 1823; and it is also worthy of note that in the edition of Bewick's 'British Birds' published in 1826 (vol. ii. p. 244) this species is first figured and described by that author from a specimen and notes supplied him by the late Mr. Yarrell, the bird itself having been bought alive in Leadenhall Market on the 3rd of November, 1823, and said to have been caught on the Essex coast. Selby records one in the late Rev. R. Hamond's collection, as 'picked up dead upon a warren in Norfolk,' the date not given; but Selby's 'British Ornithology' was published in 1833. In 1849 Mr. J. H. Gurney recorded in the 'Zoologist' the occurrence of a male and female of this Petrel at Yarmouth, in the months of October and December 1849; and in Mr. Gurney's collection is also a specimen from Yarmouth, but the date uncertain. On the 17th November, 1862, an example, in my own collection, was shot on the coast at Salthouse; and another was picked up

dead, inland, after a gale, at East Bradenham, on the 21st of November, 1864. Since that date my notes show the following repeated occurrences:—

“1867. One at Yarmouth, on the 6th of July, as recorded at the time (July 13th) in ‘The Field,’—a strange date for such a bird. One, November 14th, female; one, December 2nd, male; one, December 2nd, male; one, December 7th, male; one, December 14th, female; one, December 9th: all shot at, or near, King’s Lynn, with many of the Storm-Petrels at the same time. Records in ‘The Field’ of one at Colchester, and one at Spalding, about same date.

“1868. One at Babingley, near King’s Lynn, December 19th.

“1869. One shot on the river Bure, near Yarmouth, October 26th.

“1870. One at Gooderstone, near Lynn, the first week in January.

“1871. One, on good authority, said to have been seen at Lynn, in February.”

According to Mr. Cordeaux (Birds of Humber Distr. p. 212) two were recorded from near Spalding, in December 1867, by Mr. J. W. Harrison, and one was taken near Bentley wood, about two miles from Beverley, in the autumn of 1854. Writing on its occurrence on the coasts of Scotland, Mr. Robert Gray says (B. of W. of Scotl. p. 506) that he has “obtained specimens from Benbecula, Barra, Skye, Rum, Eigg, and Canna, also from various districts on the Firth of Clyde, and as far up as Dunoon and Roseneath. Numerous specimens occurred on the west coast in the winters of 1863, 1864, 1865, 1867, and 1868. They are met with, in fact, almost every season, and chiefly in the months of November and December. I only know of two specimens that have occurred in the east of Scotland; one of these, obtained in Caithness-shire, is now in the collection of the late Mr. Sinclair, of Wick; the other, which is now before me, was found in an exhausted state on the Loch of Forfar in the winter of 1868.” It breeds at St. Kilda, and, according to Mr. A. G. More (Ibis, 1865, p. 458), Mr. J. H. Dunn marks it as having formerly nested in Orkney; but the bird is not mentioned in the ‘Fauna Orcadensis,’ nor in the more recent work of Messrs. Baikié and Heddle. Mr. Dunbar includes it in his ‘List of the Birds of Ross-shire,’ but without mention of the locality. It has been met with in Ireland, and, according to Thompson (B. of Irel. iii. p. 415), “is of occasional occurrence in all quarters of the island. Those obtained in the north shall first be noticed. In the winter of 1831, a specimen was found dead, but in excellent condition and plumage, near Lisburn. During a storm in the winter of 1833–34, one was sprung from a bog near Downpatrick, and shot, the fowler imagining from the forked tail that it was some kind of Swallow. In August 1843, the gamekeeper at Tollymore Park informed me that about ten years before that time he found one of these birds lying dead in ‘a hollow’ among the mountains of Mourne. One shot on the 16th of December, 1834, at Conswater Point, Belfast Bay, about a mile from the town, came into my possession; and on the 10th of April, 1838, I obtained a recent bird, which was found dead near Waringtown, county of Down. There is considerable difference in the size of these two specimens, as well as slight differences in plumage; the former is  $8\frac{1}{4}$  inches in length, the latter  $7\frac{1}{4}$ , the size of the individual described in Yarrell’s work. Mr. H. N. Dombrain, one day in September 1836, when in a revenue cruiser off Arranmore, coast of Donegal, saw altogether about a dozen of these birds, two of which occasionally appeared at a time.

“On the 16th of December, 1831, two Forked-tailed Petrels were received in a fresh state, from the county of Tipperary, by Dr. R. Graves, in whose collection I subsequently saw them:

one had been found dead on a mountain. About a fortnight afterwards a specimen was picked up, dead, at Malahide, on the Dublin coast, and preserved for the Royal Dublin Society. On the 11th of December, 1834, Mr. R. Ball wrote to me, from Dublin, that he had lately seen in Mr. Glennon's possession some specimens which had been procured inland. In 1818, the year in which the species was discovered by Mr. Bullock at St. Kilda, Mr. R. Ball obtained one of these birds in the County of Cork; it was found in the month of September, on a mountain, about eight or ten miles from the sea. One was shot at Clontarf, Dublin Bay, on the 2nd of December, 1835; and in December 1839 another was found dead near Bray. One of these Petrels was picked up dead on the lawn at New Chapel Glebe, about four miles from Clonmel, on the 4th of December, 1835, after a succession of severe storms. About Waterford Fork-tailed Petrels have been procured. In December 1845 Mr. R. Chute obtained one on the south-west of the island; and on the 20th of November, 1849, he kindly sent me one of two specimens he had just then received, remarking that for the preceding ten days many had been seen about Tralee. This gentleman is not aware of any breeding-haunt of the Fork-tailed Petrel on the coast of Derry, though, as he remarks, 'the Storm-Petrel breeds on many parts of the islands of our coast.' In reference to the last date, I was afterwards informed that one day in November 1849 Fork-tailed Petrels were flying 'as numerous as Swallows' above Tralee Bay. Some of them were shot; but they fell too far out in the water to be recovered, except in one instance. The reply to my inquiry respecting the probable number seen was, that 'they kept apart from each other, passed and repassed continually; but not more than eight or ten would be seen at once. Near every part of the shore that was visible they appeared as numerous as from the canal piers, whence they were particularly observed.' In June 1850 my correspondent saw one off Kerry Head. On the 2nd of August, the same year, two were noticed on wing above the canal at Tralee; and one of them was obtained." Professor Reinhardt (J. f. O. 1854, p. 442) states that it has been met with on the coast of Greenland; but I do not find it recorded from Iceland, nor is it found at the Færoes, except at sea near those islands in the summer. Mr. R. Collett writes (Norg. Fugl. p. 76) that two specimens were shot on the fjord outside Christiania, in Norway, in the autumn of 1847, and in January 1851; and there is a third Norwegian-killed specimen in the Lund Museum. He thinks that it is probably not rare off the coast of Norway. It does not appear to have occurred in Sweden or in Finland, though Dr. Palmen refers (Finl. Fogl. p. 632) to a Petrel having been seen off the Finnish coast which may possibly have been *T. pelagica* or this species. Professor Blasius (Ibis, 1862, p. 72) states that it has occurred at Heligoland; and it has once been recorded from Germany by Naumann, who states (Vög. Deutschl. x. p. 580) that a specimen was obtained near Frankfort-on-the-Maine; and Kjær-bölling (Danm. Fugl. p. 321) says that one was shot at Copenhagen on the 25th of November, 1848, after a storm of several days' duration. Baron von Droste Hülshoff writes (Vög. Bork. p. 370) that one was killed near Leer, in East Friesland; and Professor Schlegel says that it has been seen on the Dutch coast. Baron de Selys-Longchamps gives three instances of its occurrence in Belgium—one at Louvaine, one at Antwerp, and one at Namur; and, according to Degland and Gerbe, it has frequently been obtained on the northern and western coasts of France after severe weather; and it has been likewise met with on the portions of that country bordered by the Mediterranean, several instances of its occurrence near Cette being recorded by Jaubert

and Barthélemy-Lapommeraye. Professor Barboza du Bocage states that on the Atlantic coasts of Portugal it is more common than *Th. pelagica*; but I have no record of its occurrence on the coasts of Spain; and its reported occurrence on the coasts of Italy and Sicily rests upon a mistake of Schembri's.

According to Loche a specimen was obtained on the coast of Algeria, and is now in the Museum at Algiers; and Mr. Vernon Harcourt (P. Z. S. 1851, p. 146) states that it straggles to Madeira. I find no instance on record of its occurrence in Eastern Europe.

On the American side of the Atlantic it is stated by Professor Baird to be found from Massachusetts as far as Baffin's Bay. I found it numerous off the coast of New Brunswick, in the Bay of Fundy; and Professor Baird states (Ibis, 1867, p. 292) that specimens now in the collection of the Smithsonian Institution were killed about Washington in August 1842. It is found on the Pacific coasts of North America; and Mr. Dall writes (Trans. Chic. Ac. Sc. p. 303, Oct. 1869) that it was "obtained abundantly by Bischoff at Sitka. The specimens were more rusty-coloured than is usual with this species." Dr. L. von Schrenck obtained it off the Kurile Islands, and writes (Vögel d. Amurl. p. 516) that he "can with certainty state that it is a regular inhabitant of the Pacific. Mr. Wosnessenski repeatedly observed it off the Kurile Islands, and brought home specimens obtained near the Island of Schumschu. The example we got was caught to the south-east of the Kurile Islands, Ssimuschir and Urup, in about 45° 42' N. lat." He further writes that the specimens obtained off the Kuriles agreed precisely with others from the Atlantic.

Like its near ally the Storm-Petrel, the present species is met with in all parts of the ocean, even during the most tempestuous weather, and follows in the wake of vessels to pick up any fatty refuse that may be thrown overboard, or else to obtain some slight shelter in the wake of the vessel from the violence of the elements. It glides as if walking on the surface of the water over the heavy rolling waves of the ocean with ease and facility, and even in the most tempestuous weather appears quite at home on the face of the deep. During the day-time it moves silently over the water, following the outline of the waves, and now and then fluttering over the surface as if walking on the water; and only during the night is its cry heard.

The only known breeding-place in Europe of the present species is St. Kilda, where Sir William Milner and his brother, Mr. H. B. W. Milner, found it breeding in 1847. In an account of their trip published in the 'Zoologist' for 1848, p. 2059, Sir W. Milner writes as follows:—"Not far from the top of the cliff was a colony of the Forked-tailed Petrel, breeding like the Stormy Petrel, under the stones and rock, about a yard apart. We were first attracted to them by a low chirping noise, which from time to time the females made while sitting upon their eggs. In one hole only did we find the male and female together. The egg is considerably larger than that of the Stormy Petrel, and resembles it in being surrounded at the larger end by a beautiful zone of red freckles. They are nearly three weeks before the Stormy Petrel in depositing their eggs; and in the localities where we found the Forked-tailed Petrel there was not a single Stormy Petrel." In a letter just received from Mr. H. B. W. Milner, he writes as follows:—"My brother, the late Sir W. Milner, and I visited St. Kilda in 1847 and found Leach's Petrel breeding in some abundance in all the breeding-colonies. In each hole, at a depth of from eighteen inches to three feet, we found one egg, some of which were slightly

incubated on the 14th, 15th, and 16th of June. The egg only differs in size from that of *Th. pelagica*, being white, with a pink zone round the larger end. We could always detect which holes were occupied, by the twittering notes uttered by the birds, which were very similar to those of *Hirundo rustica*. I did not notice any semblance of a nest. The common Storm-Petrel had only just commenced to breed, and did not appear to be so numerous as Leach's Petrel. This latter is found on the four islands constituting the St. Kilda group; whereas the Storm-Petrel was only met with on Soa. We had such lovely weather that we were able to visit all the islands in an open boat, with the exception of Soa, which Mr. Graham and a party of the islanders explored for us."

On the American coasts it breeds numerous on the islands at the mouth of the Bay of Fundy, whence I have for long had its eggs sent to me, and have supplied many of our British collectors with specimens. When in New Brunswick, I arranged with my friend Mr. George A. Boardman, of St. Stephens, to send out annually and collect a number of these eggs, as, not being able to visit the coast during the egging-season, I was never able to undertake an expedition and collect them for myself. Mr. Boardman, however, was more fortunate, and has taken the eggs with his own hands. He informs me that "this Petrel prefers the grassy islands, where it can burrow its hole like the Sand-Martin under the sod; and it frequently digs under rocks, making a hole varying from two to three feet in depth. It lays a single egg in a little flat nest formed of fine grasses gathered loosely together; and frequently the bird also collects a few smooth pebbles and places them in its nest-hole. The young when hatched are covered with long loose down, and look more like a little long-haired mouse than a bird, as neither bill nor wing are visible. During the day-time one rarely sees any of the birds at their breeding-place; and I think they feed at night; for we usually found the old birds in their holes, where they can be heard as one walks about, as they utter a low note like *peer wit*, which is heard in all directions. When you seize the old bird it almost always ejects a very nasty-smelling oily matter through the nostril."

I have a large series of the eggs of this Petrel, all obtained on the islands at the mouth of the Bay of Fundy, off the coast of New Brunswick. In texture of shell, shape, and colour they closely resemble the eggs of *Thalassidroma pelagica*, and are pure white, with an indistinct zone of small reddish spots round the larger end. In some these spots are very pale, and in others much darker; one or two have a few larger spots here and there in the zone, which are almost blood-red in colour, or at least as dark as the markings on eggs of Titmice or Willow-Wrens. In size they vary from  $1\frac{1}{40}$  by  $\frac{3}{40}$  to  $1\frac{1}{40}$  by  $\frac{3}{40}$  inch.

The specimen figured, on the same Plate with the Storm-Petrel, is an adult bird caught at the breeding-station in the Bay of Fundy, and now in my collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a, b, ad., c, pull.* Bay of Fundy, May.

*E Mus. E. Hargitt.*

*a, ♂.* Havre, November 17th, 1873 (*Pluche*). *b.* Labrador (*Möschler*).

## Genus OCEANITES.

*Procellaria* apud Wilson, Am. Orn. vii. p. 90 (1813).

*Thalassidroma* apud Bonaparte, Comp. List, p. 64 (1838).

*Oceanites*, Keyserling & Blasius, Wirbelth. Eur. p. 238 (1840).

THE species belonging to this genus inhabit the Palæarctic, Ethiopian, Oriental, Australian, Nearctic, and Neotropical Regions, only one species being found in the Western Palæarctic Region.

In habits they do not differ much, if at all, from the species belonging to the genus *Procellaria*; and like them they breed amongst stone heaps on islands close to the sea, depositing a single white egg.

*Oceanites oceanicus*, the type of the genus, has the bill as in *Procellaria*; the wings long and pointed, the first quill shorter than the third, the second longest; tail moderately long, slightly forked; legs very long and slender, the tarsus whole; hind toe wanting, anterior toes long and slender, interdigital membranes emarginate; claws flat, nearly straight, with the point rounded.







1. WILSON'S PETREL.  
OCEANITES OCEANICUS.  
2. BULWER'S PETREL.  
BULWERIA COLUMBINA.

E. Meade

1894

## OCEANITES OCEANICUS.

(WILSON'S PETREL.)

*Procellaria pelagica*, Wils. Am. Orn. vii. p. 90, pl. 60. fig. 6 (1813, nec Linn.).*Procellaria oceanica*, Kuhl, Beitr. Zool. p. 136, tab. x. fig. 1 (1820).*Procellaria wilsoni*, Bp. Journ. Acad. Philad. iii. pt. 2, p. 231, pl. 9. fig. 2 (1824).*Thalassidroma wilsoni*, Bp. Comp. List, p. 64 (1838).*Thalassidroma oceanica* (Kuhl), Schinz, Europ. Faun. i. p. 397 (1840).*Oceanites wilsoni* (Bp.), Keys. & Blas. Wirbelth. Eur. p. 238 (1840).*Oceanites oceanica* (Kuhl), Bp. Compt. Rend. xlii. p. 769 (1856).*Oceanites oceanicus* (Kuhl), Salvin in Rowley's Zool. Misc. i. p. 227 (1876).*Figuræ notabiles.*

Fritsch, Vög. Eur. taf. 61. fig. 3; Gould, B. of Austr. pl. 65; Audub. B. of Am. pl. 460;  
 Wilson, Am. Orn. pl. 69. fig. 6.

Fuliginoso-niger, vix cinereo-fusco tinctus: remigibus nigris: tectricibus alarum griseo-brunnescentibus, medianis vix albido notatis: caudâ nigrâ, supracaudalibus, uropygii et crissi lateribus albis: rostro nigro: iride fuscâ: pedibus nigris, membranis flavis nigro marginatis.

*Adult Male* (off Fayal, 21st May). Plumage generally sooty black with a faint greyish tinge, especially on the head and neck; wings and tail deep black; wing-coverts brownish, a few of the median coverts marked with greyish white, making an indistinct band across the wing; rump (except the central part of the upper rump, which is black), lower flanks, and sides of the under tail-coverts pure white; tail nearly even, the outer rectrices being but slightly longer than the central ones; bill and legs black, the basal half of the webs of the feet yellow; iris dark brown. Total length about 7 inches, culmen 0.65, gape 0.75, wing 5.75, tail 3.0, tarsus 1.3, bare portion of tibia 0.65.

*Adult Female.* Resembles the male.

THIS Storm-Petrel, easily recognizable by the yellow on the webs of its feet, is found on both sides of the Atlantic Ocean, and in the Indian Ocean from the coasts of North America and those of the British Isles down to Kerguelen Land and South Australia, and is by no means uncommon on the ocean off the Azores. It has been met with on the coasts of Great Britain much more frequently than Bulwer's Petrel. Jenyns (Man. Brit. Vert. Anim. p. 286) says that he "was informed by Yarrell that it had been killed in the British Channel, though at some distance from land." Mr. Gould (P. Z. S. 1839, p. 39) states that it was seen in abundance off the Land's End in May 1838; Colonel Delmé Radcliffe (Zool. 1864, p. 8892) records the occurrence of one at Freshwater, Isle of Wight, in November 1863; Couch of one at Polperro, Cornwall, in November 1838; Bond informed Yarrell of the occurrence of one in Sussex. One is also stated

by Yarrell to have been obtained in Norfolk in the spring of 1839; but Mr. Stevenson is doubtful as to the accuracy of this record; Mr. Hele states that one was procured near Aldeburgh, in Suffolk, some years previous to 1871; Mr. Marsh records the occurrence of one on the Avon, Sutton Benger, Wilts, in November 1849; and Yarrell, on the authority of Heysham, records one from Cumberland. In Scotland it does not appear to have been met with; but Thompson writes (B. of Irel. iii. p. 417) that one was presented to him in August 1840 by Mr. Glennon, of Dublin, who believed it to have been obtained in Ireland. There is, however, no evidence to show that this specimen was really procured there, and it cannot well be included in the Irish list. It has been met with elsewhere to the east of Great Britain, and seems rarely to pass along the British Channel. Messrs. Degland and Gerbe write that it has been seen off the coasts of Languedoc, and that Mr. Hardy received two in the flesh in December 1854, which were captured by a ship-captain in the Gulf of Gascony. According to Dr. Jaubert, in his notes on Degland's 'Ornithologie Européenne,' one was caught on the coast of Provence; and MM. Degland and Gerbe add that it has been more frequently captured off the coasts of Spain; but neither Lord Lilford, Colonel Irby, nor Mr. Howard Saunders include it in their lists of birds found in Spain; nor does Professor Barboza du Bocage do so in his list of the birds of Portugal. It has, however, been met with in the Mediterranean as far east as Sardinia; for Count Salvadori states that Cara assured him that a specimen was obtained near Cagliari, and was sent to the museum of that town, where it was at first in error supposed to be a common Storm-Petrel.

Off the African coast it has been recorded from various parts; and Mr. Godman, who met with it near the Azores, writes (Nat. Hist. Azor. p. 40) as follows:—"On returning from Flores to Fayal we were becalmed for some hours; and as there were a good many Petrels flying about, I took the boat belonging to the schooner and shot some. They were all of this species, nor did I see any other in the archipelago. In flying they carry their legs stretched straight out behind them, and their feet protruded about an inch beyond the tail, producing the effect of two long feathers. I know nothing about this species breeding in the archipelago, though I suspect it does, as it remains throughout the year." It has not, however, so far as I can ascertain, been met with in the Canaries, though it occurs off the African coast to the south of this group. Governor Ussher obtained it near Cape-Coast Castle; it has also been recorded from Old Calabar; and Andersson (B. of Damara Land, p. 351) says:—"This bird is not unfrequently met with off the south-west coast of Africa, as well as in many of the bays and inlets. I have occasionally seen it very abundant about the fisheries at Walwich Bay and Sandwich Harbour, where these birds would approach within a few feet of the fishermen, eagerly picking up the smaller particles of refuse thrown away by them whilst cleansing their fish on the shore." Mr. E. L. Layard (who describes it in his B. of S. Afr. p. 359) writes that his description was taken from a specimen killed in Table Bay on the 29th of April, 1865, "by my son, who informs me that he saw several more of the same species. I procured several specimens off L'Agulhas Bank in 1856, since which time, until my son found it in Table Bay, I had not seen them on the coast.

"In habits they resemble *Thalassidroma leucogaster*, with which they freely consort, flitting over the waves and picking up odd bits flung over the ships' sides. When taken in the hand

they disgorge large quantities of an oily matter, which quickly congeals and assumes the appearance of dirty lard."

On the American side of the Atlantic the present species is found from the coasts of New Brunswick down to South America. Mr. G. A. Boardman informs me that it is common on the fishing-grounds in the Bay of Fundy; and Audubon writes that he rarely saw it further to the eastward than the Azores, and along the American coast he did not meet with it to the northward beyond the 51st degree of latitude, while to the southward he rarely observed many on the Gulf of Mexico. He adds that he does not believe that any breed on the shores of the Floridas, or on the Bahamas, as alleged by Wilson, who, it seems, only stated so from report. Wedderburn and Hurdis say that in stormy weather Wilson's Petrel is often seen near the Bermudas, and has been also once or twice seen within the outer reefs, but it is a difficult bird to shoot; and Dr. Gundlach records it from Cuba, and writes (*J. f. O.* 1859, p. 349) as follows:—"Returning from Cabo Cruz to Cuba I first saw two specimens south of the Turquino Mountain near the coast, and nine others about a mile from the Bay of Cuba." Although Audubon only met with it down as far south as Mexico, it occurs all down the coasts of south America, though, owing to its oceanic habits, it is comparatively seldom met with close to the coast. There is a specimen from off the coast of Peru in the museum at Turin; and it has been recorded from other parts off the South-American coasts.

To the southward this Petrel is found in the Indian Ocean to the coasts of Australia and Kerguelen Land, and breeds on the latter island. Gould (*B. of Australia*, ii. p. 478) states, it is "one of the most abundant species of the genus inhabiting the Australian seas: I observed it in great numbers within sight of the shores of Tasmania, and shot and preserved several specimens during my passage from Sydney to Hobart Town in April 1839; I also encountered it in the following year in the seas between Sydney and New Zealand while on my passage towards Cape Horn." Captain Hutton, in his *Notes on the Birds seen on a Voyage to New Zealand* (*Ibis*, 1867, p. 190), says that "this Petrel was seen several times in the northern temperate zone, but not in the tropics. It reappeared again in about 33° S., and continued common until May 2nd, lat. 39° 3' S., long. 33° 9' E., and was then only occasionally seen to May 18th, lat. 40° 40' S., long. 88° 39' E., on which date the last was seen."

Audubon gives (*B. of America*, viii. p. 108) some notes respecting the present species, which I transcribe as follows, viz.:—"Wilson's Petrel breeds on some small islands situated off the southern extremity of Nova Scotia, and called 'Mud Islands,' but which are formed of sand and light earth, scantily covered with grass. Thither the birds resort in great numbers, about the beginning of June, and form burrows of the depth of two or two and a half feet, in the bottom of which is laid a single white egg, a few bits of dry grass, scarcely deserving the name of a nest, having been placed for its reception. The egg measures an inch and a half in length by seven eighths of an inch in breadth, is almost equally rounded at both ends, and has a pure white colour. These Petrels copulate on the water, in the same manner as the Hyperborean Phalarope. By the beginning of August the young follow their parents to sea, and are then scarcely distinguishable from them. During incubation they remain in the burrows or at their entrance, rarely going to seek for food before the dusk.

"On wing this species is more lively than the Forked-tailed, but less so than the common

Stormy Petrel. It keeps its wings nearly at right angles with its body, and makes considerable use of its feet, particularly during calm weather, when it at times hops or leaps several feet, or pats the water, whilst its wings are extended upwards with a fluttering motion; and it inclines its head downwards to pick up its food from the water, and I have observed it immerse the whole head beneath the surface to seize on small fishes, in which it generally succeeded. It can walk pretty well on the deck of a vessel, or any other flat surface, and rise from it without much difficulty. Its notes are different from those of the Forked-tailed Petrel, and resemble the syllables *kee-re-kee-kee*. They are more frequently emitted at night than by day. I never could ascertain whether or not these birds alight on the rigging at night; but my opinion is that they do not; for the sailors, to whom I had offered premiums for catching some of them, told me that, although they flew about them while aloft, they could not see one standing anywhere.

“During my several visits to the coasts of the Floridas I saw scarcely any of these birds in the course of several months spent there; but I found them pretty abundant on returning towards Charleston. This species, like the others, feeds on mollusca, small fishes, crustacea, marine plants, excrements of cetaceous animals, and the greasy substances thrown from vessels. When caught, they squirt an oily substance through the nostrils, and often disgorge the same. The sexes are similar in their external appearance.”

Audubon's statement that this Petrel breeds on the mud islands off the coast of Nova Scotia does not appear to have been confirmed by any recent naturalists; and it is not improbable that he was mistaken. I do not find any authentic record of its breeding-habits in northern latitudes; but the Rev. A. E. Eaton, naturalist to the recent Transit-of-Venus expedition, made some excellent notes respecting its nidification on Kerguelen Island, which are published in Mr. R. B. Sharpe's article on the birds obtained on that expedition, and which I transcribe as follows:—“From the 10th of October, when we passed Cape Sandwich, until the middle or third week of November, we completely lost sight of the Storm-Petrels. About the period last mentioned, however, they began to frequent Observatory Bay in large numbers. Their first appearance in it took place during a strong breeze which lasted several days. When this was succeeded by more moderate weather, we saw little of them in the day-time; but towards evening they used to fly over the water like Swallows, and some of them might be observed flying near the ground far away into the country, following the course of the valleys, or playing round the inland cliffs. We tracked them along the lower hill-sides and the margins of lakes over rocks and bogs; but our efforts to learn what became of them were unattended with success. Probably at that time they were not preparing to breed, and the birds were merely going overland from the bay to other inlets of the sea. At length, when we went to Thumb Peak, their mode of nesting was discovered. Carefully watching, with Lieut. Goodridge, R.N., the birds flying to and fro about the rocks, we observed that they occasionally disappeared into crevices amongst piles of loose stones, and crept under loose masses of rock. Having meanwhile ascertained their call, we were able by listening attentively to detect the exact positions of several of these hidden birds. They were easily caught when the stones were rolled aside; but they were in couples, merely preparing for laying, and therefore we did not find any eggs. On our way back to Observatory Bay after the Transit, we called at the American Station, and were informed by Dr. Kidder that he had observed this Petrel on the shore near Molloy Point. The sea-shore in the neighbourhood

of Observatory Bay is of a different character (for the most part) from that which is adjacent to the American Station, and, being less favourable than it, was seldom resorted to for nesting by the Petrels. But the country in general about our bay afforded them unlimited accommodation; for, provided that they can find a slope of shattered rocks with suitable chinks and crevices, or dry spaces under stones or large boulders sheltered from draughts, whether they be near the Sound or on the sides and summits of high hills, they readily appropriate them. The egg is laid upon the bare ground within the recess selected by the birds, either in a chance depression formed by contiguous stones or in a shallow circular hollow excavated in the earth by the parent. Having found numbers of their nesting-places, I will describe my method of searching for them. Whenever there was a calm night I used to walk with a darkened bull's-eye lantern towards some rocky hill-side, such as the Petrels would be likely to frequent. It was best to shut off the light and keep it concealed, using it only in dangerous places where falls would be attended with injury and progress in the dark was hardly possible, lest the birds seeing it should be silenced. On arriving at the ground selected it was probable that Storm-Petrels would be heard in various directions, some on the wing, others on their nests, sounding their call at intervals of from two to five minutes. Those on the nest could be distinguished from others flying by their cries proceeding from fixed positions. Having settled which of the birds should be searched after, a cautious advance had to be made in her direction, two or three steps at a time, when she was in full cry. As soon as she ceased, an abrupt halt was imperative; and a pause of some minutes might ensue before she recommenced her cry and permitted another slight advance to be effected. In the course of this gradual approach the position of the bird might be ascertained approximately; but it had to be determined precisely; and to learn exactly where she was, she had to be stalked in the dark noiselessly. No gleam could be permitted to escape from the lantern. Loose stones and falls over rocks—to avoid them it was sometimes necessary to dispense with slippers, and feel one's way in stockings only; for should the Petrel be alarmed once with the noise or the light, she would probably remain silent a considerable time. Now and then it would happen that upon the boulder beneath which she was sitting being almost attained the bird would cease calling. When this occurred, and many minutes elapsed without her cry being resumed, it was advisable to make a *détour* and approach the rock from the opposite side, as her silence might be attributed to her seeing a person advancing towards her, and she would probably recommence her call so soon as he was out of sight. If she did not, a small pebble thrown amongst the rocks would usually elicit some sounds from her, as she would most likely conclude that the noise was being made by her mate returning to the nest. When the stone beneath which the bird was domiciled was gained at last, redoubled care had to be exercised. By stooping down and listening very attentively her position could be accurately ascertained. Then the lantern was suddenly turned upon her before she had time to creep out of sight, and her egg could be secured with the hand, or with a spoon tied on to a stick. Sometimes I worked without a lantern, and marked the positions of the nests with piles of stones so that they might be revisited by day. Several eggs were obtained in February from nests which had been thus marked early in the previous month. The first egg taken by us was found by a retriever on the 22nd of January, on an island in Swain's Bay. Captain Fairfax sent me a nestling a day or two before we sailed for the Cape. Two of the eggs were laid in unusual situations: one of them

was found by a man under a *Pringlea* plant; but this may have been an egg of *Procellaria nereis*. The other was deposited just above the tide-mark, in a cavity of a rock rather open to the air and light. I had found the bird there one night, had taken her up in my hand, and had gently replaced her in the hollow, nearly a month before the egg was laid. The young bird in the egg has the tarso-metatarsal joint short. In the South-African Museum there is a specimen of *P. oceanica* from the S.E. coast of Africa, another from the S. coast of Africa, and two from Table Bay."

Unfortunately I do not possess the egg of this Petrel; but Professor Newton informs me that one, believed to be authentic, in the Wolley collection, measures 1.28 by 0.81 inch.

The specimen figured, on the same Plate with *Bulweria columbina*, is the one above described, and is in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Thirty miles west of Fayal, May 21st, 1865 (*F. D. Godman*). *b*, *ad.* Bay of Fundy (*J. Krider*).

*E Mus. Brit. Reg.*

*a*. Yarmouth. *b*. Atlantic Ocean (*Rev. W. Hennah*). *c*. South Africa (*Sir A. Smith*). *d*. South Australia (*Sir G. Grey*). *e*. Lat.  $36\frac{3}{4}^{\circ}$  N., long.  $12\frac{1}{4}^{\circ}$  W. (*J. Macgillivray*). *f*. Off Louis-Philippe Island (*Ant-arctic Expedition*). *g*, ♂ *ad.* Royal Sound, Kerguelen Island (*Rev. A. E. Eaton*).

## Genus PUFFINUS.

*Puffinus*, Brisson, Orn. vi. p. 131 (1760).

*Procellaria* apud Linnæus, Syst. Nat. i. p. 213 (1766).

*Thalassidroma* apud Swainson, Classif. of B. ii. p. 374 (1837).

*Nectris* apud Keyserling & Blasius, Wirbelth. Eur. p. 94 (1840).

*Cymotomus* apud Macgillivray, Man. Brit. Orn. ii. p. 13 (1842).

*Ardena* apud Reichenbach, Syst. Av. p. iv (1851).

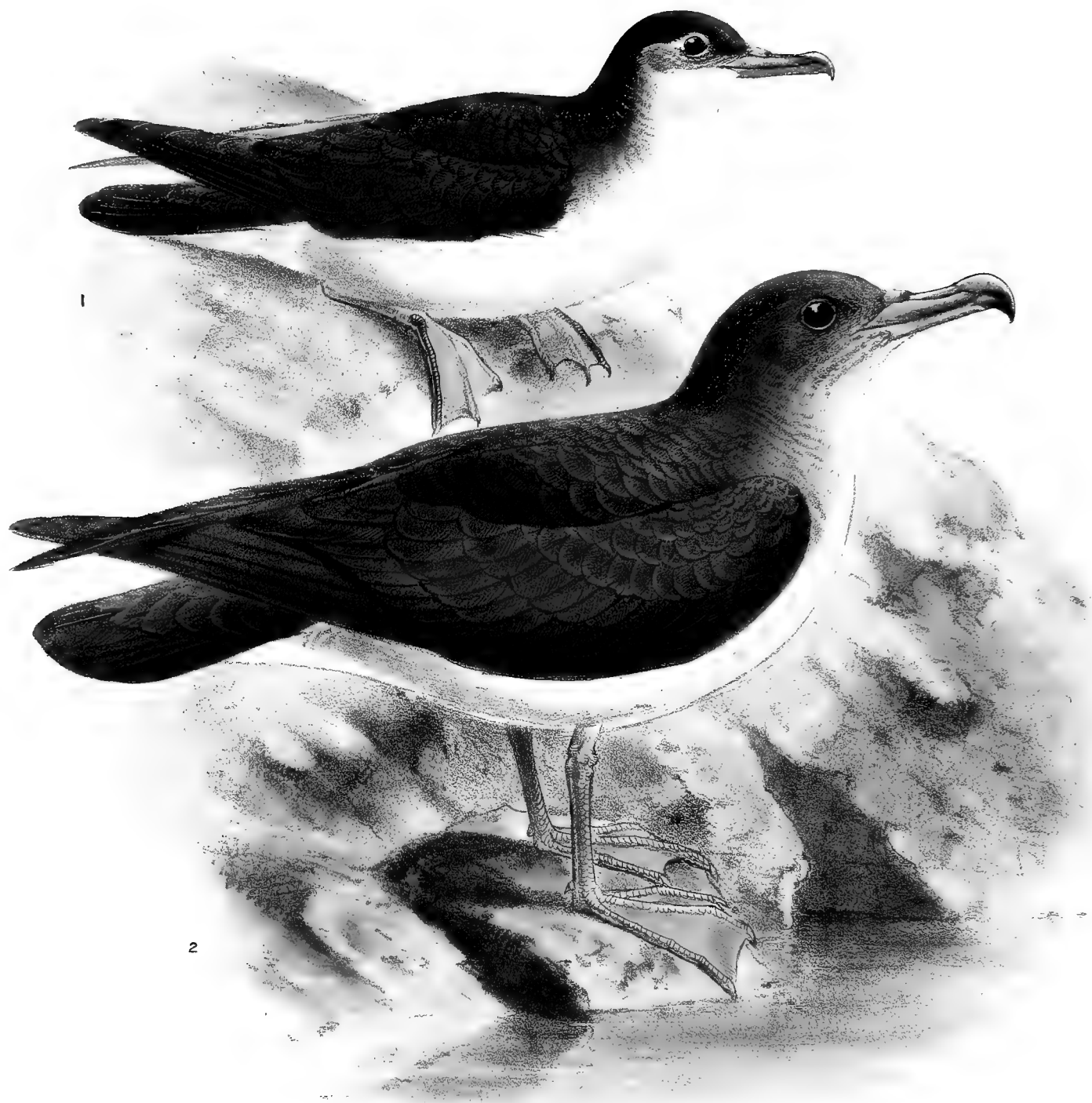
THE Shearwaters inhabit the Palæarctic, Ethiopian, Oriental, Australian, Nearctic, and Neotropical Regions, being very generally distributed over the face of the ocean. Four species inhabit the Western Palæarctic Region; and a fourth species, *Puffinus obscurus* (Gm.), is said to have straggled to us from the American coasts; but there is, so far as I can ascertain, only one record of its occurrence (viz. that of one obtained at Valentia Harbour, co. Kerry) that is not open to doubt, and I have therefore thought it unadvisable to include it.

These birds are essentially oceanic in their habits, and in form bear resemblance both to the Fulmars and the Petrels. They are more or less nocturnal in their habits (like the Petrels), have a rapid, gliding flight, and are nomadic, wandering over the face of the ocean from place to place. They feed on animal substances of various kinds, which they pick up from the surface of the water. They breed on desert islands or on wild portions of the coast, and deposit a single white egg in a fissure of a rock or in a hole in the ground.

*Puffinus anglorum*, the type of the genus, has the bill rather longer than the head, slender, much compressed towards the end, slightly recurved, but with the acute tip strongly decurved and hooked, the lower mandible straight with the tip decurved; nostrils tubular, dorsal; wings long, pointed, the first quill longest; tail rather short, rounded; feet rather large, placed far back; tarsus moderate, compressed, reticulated; hind toe very small, scarcely apparent, anterior toes long, slender, fully webbed, the outer toe slightly longer than the centre one; claws arched, compressed, rather acute.







J. Yeoman, del.

M. J. Hamlet, imp.

1. MANX SHEARWATER.  
PUFFINUS ANGLORUM  
2. MEDITERRANEAN SHEARWATER.  
PUFFINUS KUHLI.

## PUFFINUS KUHLI.

(MEDITERRANEAN SHEARWATER.)

*Procellaria puffinus*, Temm. Man. d'Orn. ii. p. 805 (1820).*Procellaria cinerea*, Kuhl, Beitr. zur Zool. p. 148 (1820, nec Gm.).*Procellaria kuhli*, Boie, Isis, 1835, p. 257.*Nectris cinerea* (Kuhl), Keys. & Blas. Wirbelth. Eur. p. 94 (1840).*Puffinus cinereus* (Kuhl), Temm. Man. d'Orn. iv. p. 506 (1840, nec Gm.).*Nectris macrorhyncha*, Heugl. Syst. Uebers. p. 68 (1856).*Puffinus kuhlii* (Boie), Bp. Consp. Gen. Av. ii. p. 202 (1857).*Procellaria cinerea* (Kuhl), Schlegel, Mus. Pays-Bas, Procell. p. 24 (1863, nec Gm.).*Puffin cendré*, French; *Berta maggiore*, Italian; *Ciefa*, Maltese.*Figuræ notabiles.*

Werner, Atlas, *Palmipèdes*, pl. 23; Fritsch, Vög. Eur. taf. 58. fig. 2; Kuhl, *l. c.*, pl. ix. fig. 13; Bree, B. of Eur. iv. pl. to p. 109.

*Ad.* pileo, nuchâ et collo postico saturatè fusco-cinereis, capitis et colli lateribus pallidioribus et griscentioribus: dorso, uropygio et supracaudalibus fusco-cinereis, plumis pallidè fusco-cinereo marginatis: remigibus primariis nigricantibus, secundariis, scapularibus et tectricibus alarum saturatè fuscis, his pallidioribus marginatis: caudâ saturatè fuscâ, versus apicem nigricante: corpore subtùs albo: rostro sordidè flavido, versus apicem fusco: pedibus sordidè flavidis: iride nigro-fuscâ.

*Juv.* corpore suprâ saturatiore et subtùs minus albo, rostro fusco-corneo, pedibus sordidè plumbeiscentibus.

*Adult* (Algerian coast). Crown, nape, and hind neck cinereous brown, becoming paler and greyer on the sides of the head and of the neck; back, rump, and upper tail-coverts similarly coloured, but the feathers are margined with pale brownish cinereous; primary quills blackish; secondaries, scapulars, and wing-coverts dark brown, the latter with lighter margins; tail dark brown, darker towards the tip; underparts pure white; bill livid-yellowish, becoming dark brownish horn at the point; legs livid-yellowish; iris dark brown. Total length about 18 inches, culmen 2·8, wing 13·6, tail 5·6, tarsus 2·1.

*Young.* Upper parts deeper in colour than the adult, and the underparts less pure white in coloration; beak dark horn; legs livid bluish.

*Young in down* (Cyclades). Covered all over with dense, rather long, down, sooty brownish cinereous in colour, more brown in tint than in the young of *Puffinus anglorum*.

COMPARATIVELY speaking the range of the present species of Shearwater is limited; for it only inhabits the Mediterranean and the archipelagos of Madeira and the Canaries. It is stated to occur off the coast of Portugal; Colonel Irby says that it is abundant in the Straits of Gibraltar;

and Mr. Howard Saunders informs me that it is common off the south coast of Spain, and he has received it from Malaga. Mr. A. von Homeyer says that he observed it near the Château d'If, near Marseilles, in the Gulf of Lyons, on the coasts of Catalonia, especially numerous off the harbour of Barcelona, and on the coasts of the Balearic Isles, and more particularly on El Layre, close to Minorca. Off the coasts of Italy, Sicily, and Sardinia, as well as all the islands of the Mediterranean, the present species is common, and breeds in suitable localities. Salvadori speaks of it as being numerous between Sardinia and Corsica, and adds that it breeds on the rocky islands close to the coast. Lord Lilford, in his notes on a cruise in the Mediterranean, writes (*Ibis*, 1875, p. 27), when anchored in the Bay of Teulada, close to the Isola Rossa, "during the night I heard strange moaning sounds from the rocky end of the island, which, I was inclined to think, proceeded from seals; but I afterwards found that they were caused by the conversation of Shearwaters (*Puffinus cinereus*), of which birds we had seen many as we came round from Cagliari, but none in the immediate vicinity of the island." According to Mr. C. A. Wright (*Ibis*, 1864, p. 153), this Shearwater "is sedentary, and breeds on the southern coast of Malta and Gozo, and on the islet of Filfla, as also on the small island of Comino. I have frequently visited Filfla in June and July, and taken the eggs, as well as the young and old birds." It is more rarely seen up the Adriatic; but Lord Lilford states (*Ibis*, 1860, p. 357) that it is occasionally seen in the channel of Corfu, but is more common further to the north on the coasts of Albania and Dalmatia; and Dr. Krüper writes that this Shearwater is tolerably numerous off the coasts of Greece, especially where its breeding-haunts are. In 1862 he discovered its breeding-places, and gave a notice respecting them in the *Journal für Ornithologie* (1863, p. 335). On the uninhabited islands of the Cyclades group this bird deposits its single egg in a deep hole in the ground or under stones. Although in 1862 he found the first eggs on the 31st May, yet the usual time when its eggs are laid is early in June, and late in July the young birds are still small and in down-plumage, and early in October they had not left their nest-holes. During the daytime these birds are quite quiet, and are neither seen nor heard, but are very lively at night, and fly hither and thither, uttering loud cries in various tones.

According to Colonel Drummond-Hay it is resident on the Ionian Islands; Dr. Krüper met with it singly on the coast of Crete in June; and Mr. Robson records it as found in the Bosphorus, and breeding on the islands of the Sea of Marmora. It is also met with off the coasts of Asia Minor, and occurs singly, Dr. Krüper writes, in the Bay of Salonica. Von Heuglin states that one was cast ashore off Alexandria; and it is met with all along the North-African coast. According to Mr. F. DuCane Godman (*Ibis*, 1872, p. 223) this species is found in all the archipelagos of the Canaries and Madeira, and must undoubtedly breed in the Desertas or other neighbouring islands, as he saw them there in considerable numbers in the month of June. I do not, however, find any record of its occurrence further south, except that Dr. von Tschudi says (*J. f. O.* 1856, p. 151) that he met with it several degrees north and south of the equator.

In habits the present species does not differ much from its smaller ally, the Manx Shearwater; and, like that bird, it breeds in holes in the ground and clefts of the cliffs. During the daytime this Shearwater is seldom seen, but flies about more by night, keeping concealed in its nest-hole during the day. I am indebted to Captain H. W. Feilden, naturalist on the last Arctic expedition, for the following notes respecting the present species, which he met with

when quartered in Malta:—"On the 1st November, 1873, I purchased a young bird of this species, alive, which had been captured the day previous on the island of Filfla, an uninhabited rock three miles south of Malta. Preparatory to killing and preserving it, I took measurements and notes of colour of soft parts. Iris very dark hair-brown, eyelid black, inside margins of beak light greenish yellow, fauces and tongue light pink, tarsi and feet washed-out pink, apex of bill greenish yellow, culmen slate-brown, rims of nares slate-brown, remainder of bill greenish yellow; grey down still remaining on top of head, breast, belly, and thighs; back, forehead, throat, neck, greater and lesser wing-coverts devoid of down. Contents of stomach a greenish substance and the horny mandibles of some species of Cephalopoda, probably *Loligo vulgaris*, Lamk. This bird breeds somewhat abundantly on the southern coast of Gozo. On the 12th of April, 1874, it had deposited its eggs: it would therefore appear probable that it rears more than one young one during the breeding-season. It nests in holes and crannies of the limestone cliffs which form the southern coast of Gozo. At the fine headland Wardiah, on the date before mentioned, I came upon two urchins armed with a fish-hook attached to a piece of cane, with which they were gaffing the Shearwaters out of their holes. I have never seen better crag-climbers than these two little Gozo boys; they ran along the face of the perpendicular cliff, by rabbit-tracks and ledges that would make a goat hesitate. On this occasion they succeeded in capturing four Cinereous and one Manx Shearwater, also procuring two eggs of the latter and one of the former species; this last specimen, however, was smashed. From a projecting angle of the cliff I had a good view of the ejection of a Cinereous Shearwater from its nest: there was a grassy ledge some 300 feet above the sea-level, to which the boys climbed; and as soon as they put their hook into a hole, out flew a Cinereous Shearwater, which, instead of flying down to the sea, rose high in air, and was pursued by a dozen or so of Mediterranean Herring-Gulls, who were nesting in the neighbourhood; these Gulls followed, and struck vigorously at the Shearwater, which easily eluded them, and became lost to view on the sky-line. The fishermen say that the green substance found in the stomachs of these birds is the digested leaves of the *Inula crithmoides*, a plant somewhat like samphire, which grows in abundance near the sea-shores of these islands; but I am somewhat disinclined to believe that birds of this order feed on vegetable matter: however, as the Maltese are excellent observers of nature, I will not commit myself to a decided negative. Mixed with this unctuous green matter I have usually found the mandibles of Cephalopoda, and in one instance the ova of some fish. When sailing round the coast of Malta this summer I found this species very abundant; at night they circled round the yacht like great bats. Their cry is melancholy and weird-like, *oṽyah! oṽyah!*"

I have received the eggs of this bird from Dr. Krüper. They are white in colour, resembling those of *Puffinus anglorum* in shape and texture of shell, but are larger in size, measuring  $2\frac{3}{4}$  by  $1\frac{2}{4}$  inch.

The specimen figured, on the same Plate with *Puffinus anglorum*, is the bird above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Algerian coast (*Fairmaire*). *b*, *ad.* Malta (*C. A. Wright*). *c*, *pull.* Cyclades (*Dr. Krüper*).

*E Mus. Howard Saunders.*

*a*, ♀. Malaga, Spain, August 6th (*Mark*). *b*, ♂ *ad.* Malta, June 1869 (*C. A. Wright*).

## PUFFINUS ANGLORUM.

(MANX SHEARWATER.)

- Puffinus*, Briss. Orn. vi. p. 131 (1760).  
*Procellaria puffinus*, Linn. Syst. Nat. i. p. 213 (1766).  
*Le Petrel Puffin*, Buff. Hist. Nat. Ois. ix. p. 321, Pl. Enl. 962 (1783).  
*Procellaria anglorum*, Temm. Man. d'Orn. ii. p. 807 (1820).  
*Puffinus anglorum* (Temm.), Boie, Isis, 1822, p. 562.  
*Puffinus arcticus*, Faber, Prodr. isl. Orn. p. 56 (1822).  
*Procellaria yelkouan*, Acerbi, Bibl. Ital. cxl. p. 294 (1827).  
*Thalassidroma anglorum* (Temm.), Swains. Classif. of B. ii. p. 374 (1837).  
*Nectris puffinus* (L.), Keys. & Blas. Wirbelth. Eur. p. 94 (1840).  
*Nectris obscura*, Keys. & Blas. op. cit. p. 94 (1840, partim).  
*Cymotomus anglorum* (Temm.), Macg. Man. B. Orn. ii. p. 13 (1842).  
*Puffinus obscurus*, Bp. Compt. Rend. xlii. p. 769 (1856, nec Gm.).  
*Puffinus barolii* (Bonelli), Bp. Compt. Rend. xlii. p. 769 (1856, nec Bonelli).  
*Puffinus yelkouan* (Acerbi), Bp. Consp. Gen. Av. ii. p. 205 (1857).  
*Procellaria yelkuan* (Acerbi), Schlegel, Mus. Pays-Bas, *Procellaria*, p. 29 (1863).  
*Puffinus yelcuanus* (Acerbi), Coues, Proc. Acad. Philad. 1864, p. 137.  
*Nectris anglorum* (Temm.), Rey, Synonymik eur. Brutv. p. 150 (1872).  
*Nectris baroli*, Rey, op. cit. p. 150 (1872, nec Bonelli).

*Scaib*, Gaelic; *Pétrel Manks*, French; *Berta minore*, Italian; *nordischer Tauchersturmvoegel*, German; *noordsche Pijlstormvogel*, Dutch; *Almindelig Skrope*, Danish; *Skraapur*, Færoese; *Skrófa*, Icelandic; *Lire-Skræpe*, Norwegian; *Stapagado* in the Azores.

*Figuræ notabiles.*

Edwards, Gleanings, pl. 359; Werner, Atlas, *Palmipèdes*, pl. 24; Kjærb. Orn. Dan. taf. 51 a; Naumann, Vög. Deutschl. taf. 277; Gould, B. of Eur. pl. 443; id. B. of G. Brit. v. pl. 84; Schlegel, Vog. Nederl. pl. 332; Audub. B. of Am. pl. 457.

*Ad.* pileo, nuchâ, capitis lateribus et corpore suprâ nigris, collo postico vix cinereo-fumoso tincto: capitis lateribus vix albido tinctis: corpore subtùs, hypochondriis et subalaribus albis: rostro nigro-fusco, mandibulâ cæruleo-corneâ: iride fuscâ: pedibus cæruleo-carneis.

*Juv.* adulto similis, sed brunnescentior: crisso et hypochondriis brunneo lavatis.

*Adult Male* (Orkney). Crown, nape, and entire upper parts black, the hind neck rather tinged with grey; sides of the head also black, but slightly marked with white; entire underparts including the flanks and under wing-coverts pure white; upper mandible blackish brown, lower mandible bluish horn; iris dark brown; legs bluish flesh-colour. Total length about 13 inches, culmen 1·6, wing 9·3, tail 3·2, tarsus 1·9.

*Young.* Resembles the old bird, but is rather browner in tinge; and the crissum and flanks are washed with brown instead of being white, as in the adult.

*Nestling.* Covered entirely with long, fluffy down, dark sooty brownish grey in colour on the upper parts, and greyish white on the underparts.

THIS, the common Shearwater that frequents the coasts of Great Britain, is found throughout the North Atlantic Ocean, not ranging into the Baltic, but is found in the Mediterranean as far as the Black Sea.

It is by no means uncommon off the coasts of Great Britain, but is much commoner on the west than on the east side of our island, and breeds on many of the islands off the coast. Mr. A. G. More says (*Ibis*, 1865, p. 458) that "it breeds in the Scilly Islands. In Lundy Island, in the Bristol Channel, formerly it was abundant on the Calf of Man, where Mr. Crellin considers that it was extirpated by rats. Mr. H. D. Graham finds it breeding on the islands of Staffa and Treshinsh; and there are several localities in the Outer Hebrides, Orkney, and Shetland. It will be observed that all these localities are situated on the west coast; and the nest seems always to be placed upon islands. I am not aware of any breeding-station on the mainland, unless Berwickshire should prove to be an exception, as the Rev. T. Duns tells me that he has seen it during summer off St. Abb's Head, and believes that a few pairs breed there occasionally." Mr. Cecil Smith informs me that he has never seen it in the Channel Islands, where, however, in all probability, it is occasionally found, nor has he any record of its occurrence off the coast of Somerset; and Mr. Mansel-Pleydell says that it is not uncommon off the Dorset coast, becoming more numerous westward, and abundant at the Scilly Isles. They occur in some numbers in the neighbourhood of Kimeridge, and are frequently seen to the eastward as well as at Portland. It appears to be not uncommon off the east coast of England, and, according to Mr. Cordeaux, is by no means unusual in autumn off Flamborough Head. According to Mr. Robert Gray (*B. of W. of Scotl.* p. 503) "there are numerous breeding-haunts of this Shearwater throughout the west of Scotland, and the bird itself may be called abundant within the circle of the Inner Hebrides. Westward of that group the only breeding-localities with which I am acquainted are Pabbay (one of the islands of Barra) and St. Kilda. Some years ago the lighthouse-keeper at Barra Head informed me that the Shearwaters had entirely deserted the island of Bernera, on which the lighthouse is built, none having been seen nesting there since 1843; and Mr. Elwes (*Ibis*, 1869, p. 28) has the following remarks bearing on the same locality:—"This bird was formerly very common, and the young ones, which were called "Fachach," were so highly esteemed that a barrel of them formed part of the rent paid by each crofter in Mingalay to the Macneills of Barra. About a hundred years ago, however, the Puffins, which were not numerous, began to increase very much, and drove the Shearwaters from the holes which they occupied in the cliffs; and now they have completely supplanted them, so that only a few pairs of Shearwaters are left in the island of Pabbay, which is next to Mingalay. The Shearwater seems to be on the decrease in most of its other breeding-places, though I never heard any reason assigned for the circumstance." In the same paper Mr. Elwes remarks that on Soay, one of the St.-Kilda group, where it was formerly very common, the Shearwater is now by no means plentiful—a change probably arising in this case also from the increase of the Puffin. One of the most extensive breeding-

places frequented by this species at present is on the island of Rum; this nursery-haunt is situated on the face of a hill among broken boulders, and is about a mile distant from the sea. In early times the breeding-place was on the coast; and the birds were then collected at the close of the season as at Barra, and salted for winter use. There is another nesting-haunt on the island of Eigg; and the Treshinsh Isles, Staffa, Iona, and various rocky islets of limited extent are also visited during the breeding-season. The Shearwaters appear in April, sometimes as early as the 10th of the month, and continue until October, when flocks are sometimes seen off the north coast of Islay. I have seen small numbers pursuing their Swallow-like flight near the entrance to Lochmaddy, in the Outer Hebrides, and have also noticed them at mid-day in the Firth of Clyde. On 25th June, 1868, I saw three or four specimens when midway between Ardrossan and the island of Arran. Mr. Graham informs me that the species is common in Iona and Mull, and that on the 12th May, during very calm weather, as he was sailing to Staffa with a party in a boat, he saw a number of very large flocks of Shearwaters swimming upon the water. They were very tame, and he procured a considerable number." In Shetland it is, Dr. Saxby states, common, arriving late in April or early in May, and at once commences breeding. Thompson says that it is a regular summer migrant to some parts of the Irish coast, and that it breeds, or used to breed, at Lambay, and on the larger Skellig Island off the coast of Kerry.

According to Professor Newton it has once occurred in Greenland, and, according to Faber, it remains off the coast of Iceland all the year. It is commoner in the south, and especially on the Vestmanneyjar, than in the north. Captain Feilden says that it "breeds in considerable numbers at Trolldhoved, Kolteroe, Kolbak, Sorvaag, Videroe, and several other places. At Videroe, on the 8th of June, we were taken to one of the breeding-places of this bird; the burrows were situated in a steep, grassy hillside, about three hundred feet above the sea. The exact position of the nests was recognizable by the patch of discoloured turf that had been replaced in prior seasons over the hole by which the young one had been removed; our conductor raised one of these sods, scraped away the peaty soil below, and, removing a clod of peat, exposed a Shearwater sitting on its egg. I took both the bird and egg; the former proved to be a male. The egg was deposited on a few blades of withered grass. I only examined this one burrow, as the islanders are extremely averse to disturbing these birds, the young being considered the choicest dainty amongst all sea-fowl." It does not breed off the coast of Norway, but visits the fishing-grounds off the coast of Bergen, and is well known to the fishermen on the Storeggen fishing-grounds off Aalesund; but Mr. Collett informs me it is seldom that specimens are brought in. One, however, now in the Christiania University Museum, was killed in the Christianiafjord in the autumn of 1870; and another, in Mr. Aall's collection, was obtained at Lyngör, near Tvedestrand, in August 1867, besides which one or two were shot off Aalesund. It has not been met with in the Baltic; but Kjærbølling says that it is found some distance at sea off the west coast of Denmark; and it occurs during severe storms from the north-west off the coasts of Germany, Holland, and Belgium, but is of rare occurrence there, as well as off the coast of Picardy, though it is met with not unfrequently on the western shores of France, and Jaubert and Barthélemy-Lapommeraye record its occurrence off Provence. Professor Barboza du Bocage states that it is not unfrequently met with off the Portuguese coasts; and Colonel Irby

speaks of it as being common in the Straits of Gibraltar in autumn, occasionally coming close in to the land in the Bay of Gibraltar. It appears to be found commonly throughout the Mediterranean, and as far as the Black Sea. On the coasts of Italy, Sardinia, and Sicily it is generally distributed, especially in the neighbourhood of rocky islands, but rarely approaches land, except at its breeding-haunts. Mr. C. A. Wright says (*Ibis*, 1864, p. 153), both this bird and *Puffinus kuhli* are "sedentary, and breed on the southern coast of Malta and Gozo and on the islet of Filfla, as also on the small island of Comino. I have frequently visited Filfla in June and July, and taken the eggs as well as the young and old birds. They lay a single egg of a pure white, rather large, and deposit it on the bare ground, in a crevice or under a fragment of rock. That of *Puffinus anglorum* is rather smaller and more elliptical than the other. Like many other sea-birds they allow themselves to be taken whilst sitting, without making any attempt to escape, merely snapping at the intruder's fingers with their strong sharp bill. Both young and old birds, when handled, are apt to eject, in a very disagreeable manner, a greenish fluid, formed by their feeding on the *Inula crithmoides*, one of the few plants that grow on that desolate rock. The fishermen use the flesh of these birds to bait their wicker pots." According to Dr. Krüper, it is common off the coasts of Greece, but everywhere less numerous than *Puffinus kuhli*. Dr. Krüper, as well as many other authors who have written on the ornithology of the Mediterranean, confuses the present species with the small Shearwater, which is commonly known by the name of *Puffinus obscurus*, from which, I need scarcely say, it is perfectly distinct. Mr. G. C. Taylor says (*Ibis*, 1872, p. 236) that "no one can be long on the Bosphorus or Dardanelles without seeing these birds. They are always passing up and down, flying close to the surface of the water. Only twice during more than a year's residence in Turkey did I see them resting on the water. Once I saw a flock settled, and swimming about near the Leander Tower opposite Scutari; and again I saw a very large flock settled on the sea, which at the time was very calm, when passing through the Greek archipelago. There is no difficulty in obtaining specimens. One day in July I was staying at Therapia, and wanted some; so I took a caique, and went so as to intercept their line of flight. They came in rapidly succeeding flocks, passing close to the boat. Out of two flocks I got five birds—quite as many as I wanted. On being lifted they vomited a clear oil; this seems to be the experience of every one. I was told they breed on the Cyanean rocks (the Symplegades) at the Black-Sea entrance to the Bosphorus." It occurs off the coast of Palestine; Canon Tristram states that he picked one up dead under Mount Carmel; and Von Heuglin says that he has frequently seen it on the sea off the coasts of Asia Minor, Syria, and North Africa. Hedenborg obtained it in Egypt; and there is a specimen in the British Museum from there. It is stated to occur off the coast of Algeria; and Favier says that it is found off Tangier from August to November, and specimens are occasionally picked up dead on the sea-shore. It occurs off Madeira and the Canaries; and Berthelot says that it breeds on the small island of Alegranza in clefts and holes in the cliffs. Mr. Godman states that it most undoubtedly nests in the Desertas or other neighbouring islands, as he saw them there in considerable numbers in June; and it occurs, he adds, in the Azorean seas, but is not so numerous as the Great Shearwater.

On the American coast it is found from Labrador down to New Jersey; and Mr. G. A. Boardman informs me that it is common on the fishing-grounds off the Bay of Fundy. Mr. Savile

Reed also writes to me stating that there is a specimen in Mr. Bartram's collection, at Bermuda, which was captured some years ago whilst sitting on its solitary egg. There is no other record of its breeding there; but it is possible that it used to do so in numbers, like the unfortunate *Puffinus obscurus*, which is now nearly exterminated; and it is probable that it still breeds amongst the rocks off St. David's Island.

Essentially an inhabitant of the ocean, the present species is usually seen far out at sea, and only visits the land during the breeding-season. I have frequently seen them in considerable numbers some distance from land, skimming along over the troubled waters with a Swift-like flight, every now and again touching the surface of the water as they glide along; and even during rough stormy weather they appear quite at home on the waves. During the winter season they are dispersed about the sea; and in all probability most of those which breed in the north migrate further south as the cold weather sets in.

Macgillivray says that the flight of this Shearwater is "gliding, rapid on occasion, buoyant and easy. It flies low over the sea, descending into the troughs of the waves, and mounting again. When hovering over an object seen in the sea, it lets down its feet and pats the water with them. In dark or stormy weather it has an ominous aspect as it glides rapidly along and disappears in the haze. Its food consists of various animal substances; but the particular kinds have not been determined, its gullet and stomach having usually been found filled with decomposed matter and oil, which it vomits on being seized."

By many observers this Shearwater is stated to be crepuscular in its habits; but this appears to be the case chiefly, if not entirely, during the breeding-season, when they remain in their retreats during the daytime and appear outside when the shades of evening set in: in the winter season I have seen numbers about at all times of the day. The nest is in a burrow dug in the soil of the steep cliffs; and this burrow is said to vary in depth from one to two feet. The nest itself consists merely of a few straws or dry herbs; but sometimes the egg (for only one is deposited) is laid on the bare soil. The same hole is frequently used for several years in succession; but occasionally the bird will dig a new one, either after its first nest has been robbed or when it reappears in the spring. The first eggs are generally deposited early in May; and sometimes fresh eggs are found about the middle or end of June. The egg is pure white in colour, about the size of a common hen's egg, but very smooth in texture, though with scarcely any gloss; and those in my collection average in size  $2\frac{1}{4}\frac{5}{10}$  by  $1\frac{2}{4}\frac{6}{10}$  inch.

The young birds, which are fit for taking in August, are greatly sought after by the fishermen, and are looked on as a great delicacy; and Mr. Low says that the country people salt them down for winter provision and boil them with cabbage.

The specimens figured are an adult male from the Orkneys and a young bird in down from the Færoes, both of which are in my collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Orkneys, 1869 (*Dunn*). *b*, ♂. Leadenhall Market, 1868 (*H. E. D.*). *c*. Færoes (*H. C. Müller*).  
*d*, *pull.* Færoes, July 23rd, 1872 (*H. C. M.*). *e*. Bosphorus (*H. Seebohm*).

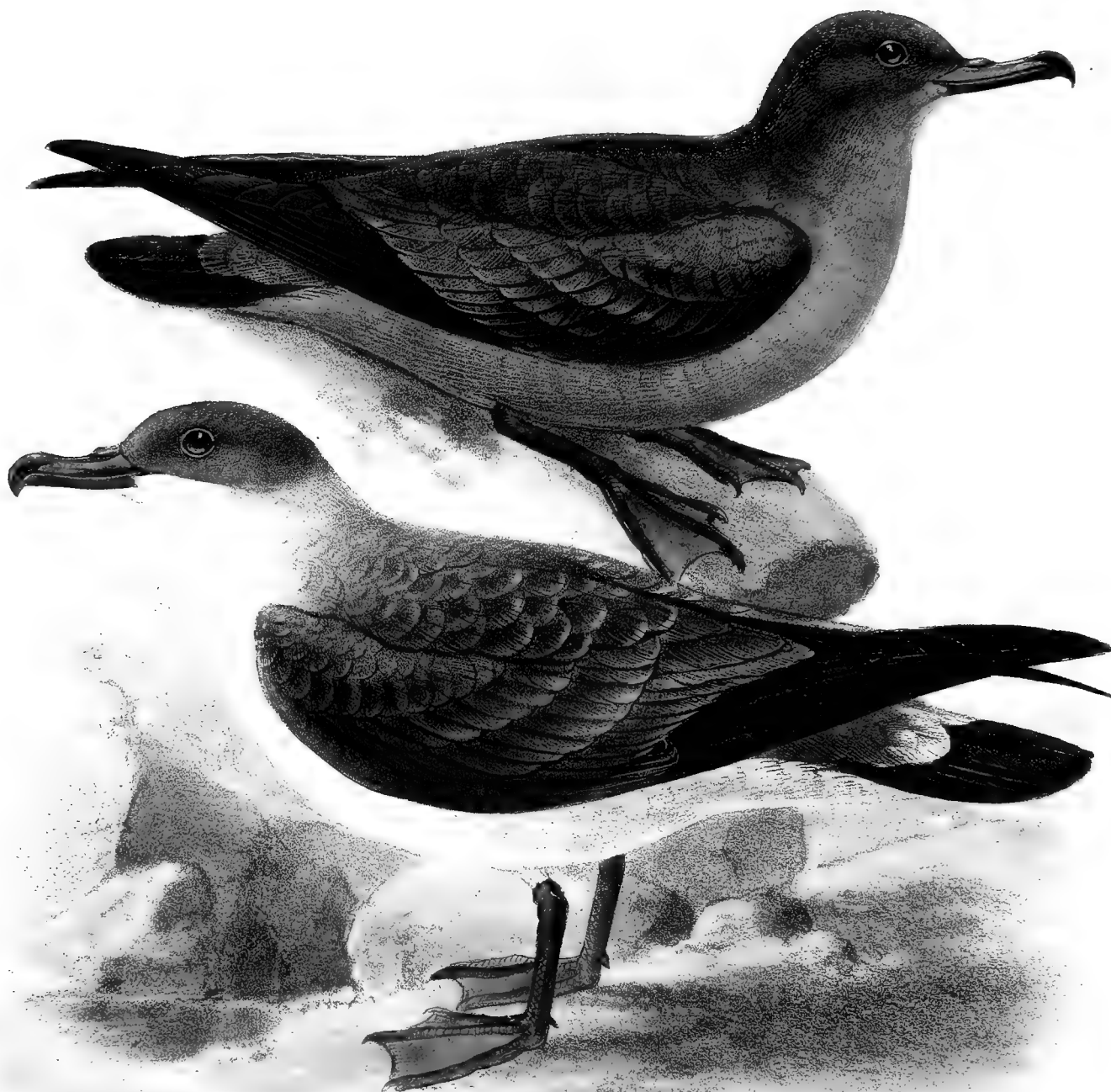
*E Mus. Howard Saunders.*

*a, b*, ♀. Rathlin Island, May 24th, 1866 (captured on eggs, *H. S.*). *c*, ♀. Færoe Islands, June 23rd, 1873 (*S. v. Müller*). *d*, ♀. Malta, December 8th, 1862 (*C. A. Wright*).

*E Mus. C. A. Wright.*

*a, ♂, b, ♂, c, ♂, d, ♂*. Bosphorus, June 27th, 1874 (*C. A. W.*). *e*, ♀. Bosphorus, June 25th, 1874 (*C. A. W.*).  
*f*. Malta, December 1863 (*C. A. W.*).





J.G. Keulemans lith

M & N Hanhart imp

1. SOOTY SHEARWATER.  
PUFFINUS GRISEUS
2. GREAT SHEARWATER.  
PUFFINUS MAJOR.

## PUFFINUS GRISEUS.

(SOOTY SHEARWATER.)

- Nectris fuliginosa*, Solander, MS.; Parkinson, Icon. ined. no. 23.  
*Grey Petrel*, Lath. Syn. iii. p. 399 (1785).  
*Procellaria grisea*, Gm. Syst. Nat. i. p. 564 (1788, ex Lath.).  
*Procellaria fuliginosa*, G. Forst. Icon. ined. no. 94.  
*Procellaria fuliginosa*, Kuhl, Beitr. Zool. Procellar. p. 148. no. 27 (1820).  
*Puffinus fuliginosus*, Strickl. Proc. Zool. Soc. 1832, p. 129.  
*Puffinus cinereus* ♀, Gould, B. of Eur. pl. 445. fig. 2 (1838, nec Gmel.).  
*Nectris fuliginosa* (Strickl.), Keys. & Blas. Wirbelth. Eur. p. 94 (1840).  
*Puffinus major* ♀, Temm. Man. d'Orn. iv. p. 508 (1840, nec Fab.).  
*Procellaria tristis*, J. R. Forst. Desc. Anim. p. 23 (1844).  
*Puffinus tristis* (Forst.), Gray, Ibis, 1862, p. 244.  
*Nectris amaurosoma*, Coues, Proc. Ac. N. Sc. Phil. 1864, p. 124.  
*Puffinus amaurosoma* (Coues), G. R. Gray, Hand-l. of B. iii. p. 102 (1871).  
*Puffinus griseus* (Gm.), Finsch, J. f. Orn. 1874, p. 209.  
*Puffinus griseus* (Gm.), O. Salv. in Rowley's Orn. Misc. pt. iv. p. 236 (1876).  
*Kakordlungnak*, Greenlandic.

*Figuræ notabiles.*

Gould, B. of Eur. pl. 445. fig. 2; Yarrell, Brit. B. iii. pl. on p. 647. upper fig.; Smith, Ill. Zool. S. Afr. *Aves*, pl. 56.

*Ad.* suprà fuliginoso-fuscus, dorsi plumis vix pallidiore marginatis: subtùs pallidior et griseo tinctus, mento et gulâ griseo-cinereis: subalaribus albis vix griseo tinctis et fusco marmoratis, scapis fuscis: alis et caudâ nigro-fuscis: rostro nigro-fusco, ad basin pallidiore: pedibus extùs nigricantibus, intùs et membranâ natatoriâ sordidè ochraceo-fuscis: iride fuscâ.

*Adult* (Plymouth Sound). Upper parts deep fuliginous brown with a chocolate tinge, the feathers on the back with slightly lighter edges; underparts lighter than the upper parts, being fuliginous brown with a greyish tinge; the chin and upper throat much lighter, being dull ashy grey; under wing-coverts white with a greyish tinge and marbled with brown, the shafts of the feathers dark brown; wings and tail blackish brown; bill brownish black, somewhat lighter on the edge of the lower mandible; outer portion of the tarsus and outer toe blackish brown, the rest of the legs and the webs dull brownish ochreous; iris deep brown. Total length about 16 inches, gape 2.25, wing 11.85, tail 3.7, tarsus 2.22, middle toe 2.8.

THIS dark fuliginous Shearwater has for long been known to occur on the coasts of Great Britain; but it has been confused with *Puffinus major*, of which it has been supposed to be the female or

young. Its range, now that I have ascertained that it is specifically inseparable from *Nectris amaurosoma* of Coues and *Procellaria grisea* of Gmelin, is very extensive; for it is found in the Atlantic from the coast of Greenland to the extreme south, in the Pacific from the coast of California down at least to Chili, and off the coast of New Zealand. It is difficult to discriminate the records of its occurrence in Great Britain, as it has so very generally been confused with *Puffinus major*, from which it is clearly distinct, so much so that Dr. Coues, in his "Critical Review of the Family Procellariidæ" (Proc. Ac. N. S. Phil. 1864, pp. 123, 124), treats of it as belonging to a distinct genus. Yarrell (Brit. B. iii. p. 647) and Gould (*l. c.*) both figured the present species as a Great Shearwater; and the latter remarks (B. of G. Brit. vol. v.) that out of fifty or eighty specimens which have come under his notice not more than three or four were referable to the present species, all the rest being Great Shearwaters, which shows that, as a rule, it is much less numerous on our coasts than *Puffinus major*—though on the east coast the reverse would appear to be the case, at least off the Yorkshire coast; for Mr. Cordeaux, who believed the present species to be the young of *Puffinus major*, says (B. of Humb. Distr. p. 211) that most of the large Shearwaters which occur there are referable to this species; and Mr. Boulton obtained three near Flamborough in the autumn of 1866. The first recorded British specimen was that described by Strickland (*l. c.*), which was shot by Mr. George Marwood, jun., of Busby, in August 1828, at the mouth of the Tees during stormy weather; and it has doubtless been met with on other parts of the east coast. On the south coast of England it appears in company with *Puffinus major*. Mr. Gatcombe says that it is met with off Plymouth, and that a friend of his possesses two specimens; and the specimen figured by Yarrell was obtained off Mounts Bay, Cornwall, in 1838 (it being the only example ever seen in Cornwall), by Mr. Mitchell, who sent it to Mr. Yarrell. Mr. Mansel-Pleydell says that Mr. Horner, of Mell's Park, presented to the Frome Scientific Institute a specimen of the "Dusky Shearwater," which I surmise to be one of the present species. It is also stated by Degland and Gerbe to have been several times seen off Dieppe.

It is found off the coast of Greenland, and is, Dr. Coues states, especially numerous off the coast of Newfoundland. Captain Feilden informs me that he observed it in company with *Puffinus major* sixty miles south of Cape Farewell on the 22nd June, 1875; and it is stated to be common off the coast of Labrador. Mr. George A. Boardman informs me that in the late summer and autumn it is numerous on the mackerel-grounds off the Bay of Fundy, and is known to the fishermen by the name of "Black Hagdon." It is found in the Atlantic as far south as the Cape of Good Hope, where Smith states that it is common; and in the Pacific it is found from California down to Chili, from both of which coasts I have examined specimens, as also from New Zealand, where, according to Buller (B. of N. Zeal. p. 317), it is "said to be extremely abundant at Stewart's Island and on the adjacent coast of New Zealand." Dr. Finsch states (*l. c.*) that he received a specimen from Chatham Island through Professor Hutton, and adds that he has convinced himself of its specific identity with *Nectris amaurosoma*, Coues.

At first I had some hesitation in uniting the present species with the bird from California, Chili, and New Zealand; but a careful examination and comparison of specimens, for which I am indebted to Mr. O. Salvin, has convinced both him and myself that there is no specific

difference in the various examples we have had for examination. In coloration there is no variation whatever; and as regards measurements, the following table will show that the variation is but slight and certainly not enough to warrant separation:—

	Gape. inches.	Wing. inches.	Tail. inches.	Tarsus. inches.	Middle toe. inches.
Plymouth Sound . . . . .	2·25	11·85	3·7	2·22	2·8
California . . . . .	2·25	11·7	3·5	2·22	2·8
Coquimbo . . . . .	2·12	11·0	3·9	2·1	2·55
Chili . . . . .	2·22	10·5	3·75	2·1	2·6
„ . . . . .	2·25	11·0	3·8	2·05	2·52
„ . . . . .	2·05	11·1	3·75	2·0	2·5
New Zealand . . . . .	2·22	12·0	3·75	2·2	2·68

In all the specimens the coloration of the under wing-coverts, which is characteristic, agrees closely.

In habits the present species is said to agree closely with *Puffinus major*, in company with which species it is usually seen off our coasts.

The only record respecting the nidification of this bird I have found (except Mr. Buller's statement that its egg is "white, stained with reddish brown, and measures 3·25 inches in length by 2 inches in breadth") is contained in the following notes by Mr. Travers, who writes (Trans. N. Zeal. Inst. v. p. 220), that it is "common all round the coasts of the Chatham group. It burrows a horizontal hole, from three to four feet deep, and turning slightly to the right or left, in peaty ground. At the extremity of this hole it forms a rude nest composed of twigs and dead leaves. Only one egg is laid; and the male bird assists in the work of incubation. They are very savage whilst on the nest, biting and scratching those who molest them. The young bird is singularly fat, and when taken from the hole disgorges a quantity of oily matter of most offensive smell. This, however, is esteemed a delicacy by the Maoris, who hold the young birds over their mouths, allowing the substance to drain into them. The old birds roost on shore, the noise they make during the whole night being absolutely frightful, resembling an exaggerated chorus of squalling children and love-making cats, in which the performers were numbered by thousands. From the manner in which this noise was intensified on each fresh arrival I could only conclude that the whole lot were squalling out their adventures during the day. When taken out of their holes they flutter about on the ground for some time, tumbling over stumps in a confused manner, but ultimately make for the sea."

The specimen figured, on the same Plate with *Puffinus major*, is the one above described, from Plymouth Sound.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a.* San Nicolas, S. California, July 1st, 1863 (*Dr. E. Coues*).

*E Mus. Salvin et Godman.*

- a.* Plymouth Sound (*J. Gould*). *b*, ♂, *c*, ♂. Chili (*E. C. Reed*). *d.* Corral, Valdivia, Chili (*E. C. Reed*).  
*e.* Coquimbo, Chili, August 7th, 1868 (*Dr. Cunningham*). *f.* New Zealand, 1875 (*Whitely*).

*E Mus. Brit. Reg.*

- a.* S. Africa (*Smith*). *b.* Australia.

## PUFFINUS MAJOR.

(GREAT SHEARWATER.)

?*Procellaria gravis*, O'Reill. Greenl. and N.W. Passage, p. 140, and pl. fig. 1 (1818).

*Puffinus major*, Faber, Prodr. Isl. Orn. p. 56 (1822).

*Puffinus cinereus*, Bp. Synops. p. 370. no. 311 (1828, nec Gm.).

*Nectris cinerea*, Keys. & Blas. Wirbelth. Eur. p. 94 (1840, nec Gm.).

*Cymotomus arcticus*, Macg. Man. Brit. Orn. ii. p. 13 (1842, nec Fab.).

*Puffinus arcticus*, Macg. Man. Brit. Orn. ii. p. 262 (1842, nec Fab.).

*Ardenna major* (Fab.), Reich. Syst. Av. pl. 14. fig. 770 (1844).

*Procellaria major* (Fab.), Schleg. Mus. Pays-Bas, Procell. p. 27 (1862).

*Puffinus obscurus*, Harting, Handb. Brit. B. p. 176 (1872, partim, nec Gm.).

*Kakordlungnak*, Greenlandic; *Stóra-skrófa*, Icelandic.

*Figuræ notabiles.*

Gould, B. of Eur. pl. 445. fig. 1; id. B. of G. Brit. v. pl. 83; Audub. B. of Am. pl. 456.

*Ad.* pileo, capitis lateribus et nuchâ saturatè fuscis, collo postico albo fusco tincto: corpore suprâ saturatè fusco, plumis pallidiore marginatis: supracaudalibus albis fusco notatis: caudâ nigro-fuscâ: remigibus nigro-fuscis, in pogonio interno ad basin albis: mento, gulâ et corpore toto subtùs albis: subcaudalibus griseo-fuscis, albo apicatis: rostro nigro-corneo: pedibus extùs fuscis, intùs et membranâ natatoriâ flavido-carneis: iride fuscâ.

*Adult Male* (Plymouth Sound, 11th December). Crown, sides of the head, and nape deep brown; lower part of the hind neck white tinged with brown; upper parts generally deep brown, the feathers with rather lighter edges; lower portions of the upper tail-coverts white marked with brown; tail blackish brown; quills blackish brown, but white on the basal portions of the inner web; chin, throat, and entire underparts white; under wing-coverts white, the edge of the wing dark brown; under tail-coverts greyish brown tipped with white; bill deep blackish horn; the outside of the tarsus and the exterior toe brownish, rest of the feet and the webs yellowish flesh-colour; iris dark brown. Total length about 19 inches, culmen 2·35, gape 2·05, wing 12·6, tail 4·7, tarsus 2·38, middle toe 2·65.

*Obs.* I have not been able to collect together a series of specimens for comparison as regards size and change of plumage; but Dr. E. Coues states (Proc. Ac. N. S. Phil. 1864, p. 134) that the individual variation in size is considerable, and that "the bills of various specimens, as well as the tarsus and toes, differ to the amount of two or even three tenths of an inch; the wings from the carpus three fourths of an inch or more, and the tail proportionally. The relative proportions, however, and the shape of these several parts, appear to be pretty constant. There also exist greater variations in colour than are found in most of the species. The difference appears to depend chiefly upon age or, rather, upon the age of the feathers themselves. Just after the moult, when the feathers are fresh and new, they are of a clear deep brown with a considerable admixture of a plumbeous tinge, and their margins are exceedingly light-

coloured, in fact almost white on the tertiaries &c. With advancing age the feathers become more and more of a duller brown, much like that given by Audubon in his plate; the margins are broader, less deeply defined, and simply of a dull greyish brown. Constant characters, however, seem to be the uniformity in colour of the feathers of the head, there being no light margins to them, the peculiar line of demarcation on the sides of the head and neck, and the partially white upper, and almost wholly dark under tail-coverts."

THROUGHOUT the whole of the Atlantic Ocean, from the coasts of Greenland to the Cape of Good Hope and Terra del Fuego, the present species appears to range generally, but it does not penetrate into the Baltic or Mediterranean, being replaced in the latter sea by *Puffinus kuhli*. It is of not unfrequent occurrence off the coasts of Great Britain, being more especially met with on the west side of our island.

As will be seen in my article on *Puffinus griseus*, I have ventured to differ with Mr. Gould and other authors who have united that bird with *Puffinus major*, for reasons there given; and as the two species have very generally been united, it is somewhat difficult to discriminate, in treating of the occurrences of the Great Shearwater, as to whether the present species or *Puffinus griseus* is referred to; but, so far as I can ascertain, the present species has occurred in Great Britain much more frequently than *P. griseus*. Yarrell figures one sent to him by Mr. D. W. Mitchell, of Penzance, who wrote to him as follows:—"In November 1839 a man brought me a *Puffinus major* alive, which he said he had found asleep in his boat when he went off to unmoor her, preparatory to a fishing expedition. I suppose this happened about three in the afternoon, and that the bird had probably taken up his quarters at daylight. The moorings at Newlyn are from a hundred to two hundred yards from the shore. There were great numbers of this species off Mounts Bay at that time; and I soon after had two more brought to me which had been taken by hooks. The adult bird appears pretty regularly every autumn, though not always in equal numbers. It has long been in several collections at Plymouth, though it does not appear to have been distinguished there from *Puffinus anglorum* until Dr. Moore published his Catalogue of the Birds of Devon. The latter is not a very common bird there, which may have been the cause of such a mistake. *Puffinus major* is very well known to the Scillonians, by whom it is called *Hackbolt*. They inform me that it is a constant visitant in the latter part of the autumn, and represent its manners on the water as resembling those of *P. anglorum*. I recollect seeing four last year, through a telescope, in Mounts Bay. It was late in the afternoon, the wind blowing hard from S.S.W., which accounted for their being so far inshore, as they are generally deep-sea goers. They had exactly the flight of *P. anglorum*, and kept so close to the water as almost to skim the tops of the waves. Mr. Clement Jackson told me last spring that they appear some autumns off Looe and Polperro in thousands."

The specimen I have figured was obtained near Plymouth by Mr. J. Banker in December 1852, and after his death purchased of his widow for me by my friend Mr. Gatcombe. This and another, a pair, were captured in an exhausted state by a couple of trawl-boys in Plymouth Sound, on the 11th December, and by them sold the same evening to Mr. Banker. The other specimen, a female, was sent by Mr. Gatcombe, through Mr. J. H. Gurney, to the Norwich Museum. Curiously enough Mr. Harting (*l. c.*) records these two specimens under the name of *Puffinus obscurus*, a perfectly distinct species.

The Great Shearwater has occurred on the coast of Dorset (a specimen was, Mr. Mansel-Pleydell says, shot in Swanage Bay in 1868); and it has been met with off the coast of Norfolk. It is, Mr. Cordeaux states, a rare autumn visitant to the coast of Yorkshire; but, judging from his description of the bird, *Puffinus griseus* occurs there more frequently than the present species. On the coasts of the mainland of Scotland it does not seem to have occurred; but Mr. Robert Gray says that Messrs. Baikie and Heddle, in a manuscript note, state that it has occurred in Shetland; and Dr. Saxby (B. of Shetl. Isl. p. 363) says that on the 10th of June 1870, Mr. Robert Nicholson brought him a specimen shot at the haaf a day or two previously. It has also been obtained on the Irish coast; Mr. Davis informed Mr. Thompson (B. of Irel. iii. p. 407), "the first specimen recorded from there was 'taken in August 1835 near Dungarvan, county of Waterford, and sent to me alive. It was apparently in good health, but would not eat any thing, and died after having been in my possession for about ten days or a fortnight. It had an extremely rank, fishy, or oily smell at all times; but I never saw any appearance of oil being discharged from its mouth or nostrils. It seemed unable to walk, but scrambled about with its breast about an inch from the ground. Although its wings were perfect and uninjured, it made no attempt to fly, but if let fall from a height dropped heavily to the ground. It showed an inclination to climb, having several times mounted up the handle of a long spade that rested against the wall of the yard in which it was kept. It did not ramble about, nor care much for water, but when put in a large tub very dexterously pulled itself up by the hooked bill until the claws got on the edge. When handled it bit severely.'

"The second specimen was received alive on the 19th of September 1839 by Mr. Davis, who informed me that it was captured one or two miles outside Dungarvan by a person fishing for hake (*Merlucius vulgaris*) with a hook and line, it having taken his bait. I kept it alive for about a week, but not having a suitable place for it, had the bird killed and set up. It was more lively than the former one, which, so far as can be recollected, it resembled in every respect as to plumage, and ran along with the breast about an inch and a half from the ground. Having on one occasion placed this bird on a roof, it seemed to be more at ease on the inclined plane afforded by that situation than on a flat surface, and mounted rapidly to the top, though on reaching the edge no attempt at flight was made, and it fell heavily to the ground. It rarely stirred at all during the day, but kept itself as much out of view as possible, and if the body could not be concealed would endeavour to hide its head." It is found in Iceland and Greenland; but Professor Newton remarks that Faber only met with one example of this Shearwater in Iceland, and that it probably rarely extends its wanderings so far north, though it is said by Professor Reinhardt to breed in Greenland, where, according to Holböll, large numbers are found from the southern point of the country to 65° 30' N. lat. Captain H. W. Feilden, who, when in the 'Alert' on the recent Arctic expedition, tried to obtain some particulars respecting this Shearwater, writes to me as follows:—"I was unfortunate in not being able to obtain specimens; but I have no doubt that this is the species of Shearwater noticed by the whalers off Cape Farewell, and which accompanies them some distance up Davis Strait. On the 22nd of June 1875, when sixty miles to the south of Farewell, several examples were flying in the wake of the ship. Some were of a uniform sooty hue, whilst others were white on the underparts, with a neck-band of the same colour, and a band of white across the middle of the tail-feathers.

In size they were rather longer across the wing than the Fulmars. The Shearwaters parted company with our ship in Davis Strait, near the latitude of Godthaab. These birds, I imagine, leave the south coast of Greenland in winter and take to the more temperate regions of the Atlantic. On the 19th October 1876, when returning to England, in lat.  $55^{\circ} 44'$  N., long.  $35^{\circ} 38'$  W., a thousand miles from Cape Clear, we ran in amongst these birds, and they followed the ship, in company with Fulmars and Kittiwakes. A few miles south of the fifty-fourth parallel the Fulmars left us; but the *Puffinus major* and Kittiwakes kept us company across the Atlantic, and a dozen or more of these large Shearwaters were round the ship when we sighted the Blasquets, off the coast of Kerry. As we approached within eight or ten miles of the Irish coast, and the vicinity of the Skelligs, *Puffinus major* left us, and flocks of *Puffinus anglorum* were seen. The flight of the Greater Shearwater is very striking; with a single movement of the wings they alter their course, and, without any apparent effort, glide down the valleys between the Atlantic rollers, the only movement of the wings being a barely perceptible quiver."

According to Professor Schlegel, there is in the Leyden Museum a specimen of *Puffinus kuhli*, received from Mr. Möschler, the well-known dealer at Herrnhut, which is stated to have come from Greenland; but I cannot help surmising that there may have been some mistake about this specimen.

Twice when crossing the Atlantic I have seen the present species of Shearwater—once some distance off the coast of Ireland, and once on the banks off Newfoundland.

According to Captain Feilden, it is sometimes seen by the fishermen out at sea, during the winter, near the Færoes, but does not nest on those islands. It only ranges eastward to the Norwegian coast as an extremely rare straggler. Mr. Collett records (J. f. O. 1874, p. 45) a female obtained near Christiania in the month of October, this being the only instance I find on record of its occurrence there; but Lilljeborg states (Öfv. K. Vet. Ak. Förh. 1849, p. 31) that he saw it on the sea, between Schuretskaja and the North Cape, in August 1849. According to Mr. Cordeaux a large Shearwater, probably the present species, has been seen off Heligoland; but no specimen was obtained; nor do I find it recorded from the northern shores of the continent of Europe, except by Messrs. Degland and Gerbe, who say that Mr. Hardy has obtained it near Dieppe.

I do not find any undoubted record of its occurrence on the Atlantic islands; for although Mr. F. DuCane Godman states that it is found off the Azores, I have lately ascertained from him and Mr. Salvin that he was mistaken as to the species occurring there, it being *P. kuhli*, not *P. major*.

On the American side of the Atlantic the present species is found not uncommonly off the northern portions of the coast. Mr. Lawrence gives its range as from the Gulf of St. Lawrence to the Florida coast; and Mr. G. A. Boardman informs me that it is common on the mackerel-grounds off the Bay of Fundy, arriving early from the north. In the South Atlantic it has been obtained off the coast of Guinea by Pel, and at the Cape of Good Hope by Smith and Dr. van Horstock; and a specimen from Terra del Fuego, collected by Mr. T. R. Peale, was examined by Dr. Coues, and pronounced to be specifically identical with the North-Atlantic bird. It does not, Dr. Coues says, occur in the Pacific.

In habits the present species is stated to resemble *Puffinus anglorum*, from which it is easily

distinguishable by its larger size. I have only on two occasions seen it alive, skimming, like *Puffinus anglorum*, the waves of the Atlantic, gliding down the slopes formed between the waves and up the other side, tolerably close to the surface of the water, with extended wings, which are rarely flapped, but kept almost motionless as it glides along.

So far as I can ascertain, there is no authentic account of the breeding-habits of this Shearwater; and the eggs which do duty in the cabinets of collectors as belonging to it are almost always those of *Puffinus kuhli*.

The specimen figured, on the same Plate with *Puffinus griseus*, is the one from near Plymouth above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂. Plymouth Sound, December 11th, 1852 (*J. Banker*). *b*. Bay of Fundy (*G. A. Boardman*).

*E Mus. Brit. Reg.*

*a*. S. Africa. *b*. Cape of Good Hope (*Smith*).



## Genus FULMARUS.

*Procellaria* apud Brisson, Orn. vi. p. 143 (1760).

*Fulmarus*, Stephens in Shaw's Gen. Zool. xiii. pt. 1, p. 234 (1825).

*Rhantistes* apud Kaup, Natürl. Syst. p. 105 (1829).

*Wagellus* apud G. R. Gray, List of Gen. of B. p. 78 (1840).

THE Fulmar Petrels inhabit the northern portions of the Palæarctic and Nearctic Regions; and only one species is found in the Western Palæarctic Region, where it is tolerably common in some portions. They, like the Petrels and Shearwaters, are essentially oceanic in their habits, frequenting the ocean, being often found far from land. They have a rapid, gliding flight, and skim along the surface of the water, describing long curves, and now and again touching the water. They feed on blubber, fish, fatty substances, crustacea, and mollusca, which they pick up from the surface; and when caught they eject a clear oily matter from their mouth and also through their tubular nostrils. They breed on the ledges of cliffs, making a nest of dried herbage and withered tufts of the sea-pink, and deposit a single white egg, which has a rather rough surface and a musky smell.

*Fulmarus glacialis*, the type of the genus, has the bill shorter than the head, stout, higher than broad at the base, moderately compressed, straight, with the tip much decurved, the point acute, lower mandible with the angle long and narrow, the sides erect, with a longitudinal groove, the edges sharp, the dorsal line very short, ascending, slightly concave, the edges decurved at the end; nostrils tubular, the plate covering them separated by grooves from the erect convex sides; wings long, narrow, pointed, the first quill longest; tail moderate, rounded; legs of ordinary length, stout, the tibia bare below, the tarsus reticulated; hind toe very small, with a conical claw; anterior toes slender, with the webs full; claws moderate, arched, compressed, moderately acute.







F. Heale del.

FULMAR.  
PROCELLARIA GLACIALIS.

## FULMARUS GLACIALIS.

(FULMAR.)

*Procellaria cinerea*, Briss. Orn. vi. p. 143, pl. xii. fig. 2 (1760).*Procellaria glacialis*, Linn. Syst. Nat. i. p. 213 (1766).*Le Pétrel cendré*, Buff. Hist. Nat. Ois. ix. p. 302, pl. xx. (1783).*Fulmarus glacialis* (L.), Steph. in Shaw's Gen. Zool. xiii. pt. 1, p. 234, pl. 27 (1825).*Rhantistes*, Kaup (*Procellaria glacialis*, L.), Natürl. Syst. p. 105 (1829).*Procellaria hiemalis*, C. L. Brehm, Vög. Deutschl. p. 800 (1831).*Procellaria minor*, Kjærb. J. f. Orn. 1854, B. p. lix.*Procellaria cinerea*, C. L. Brehm, Vogelfang, p. 353 (1855).*Procellaria minor*, C. L. Brehm, ut suprâ (1855).*Procellaria borealis*, Brehm, Naumannia, 1855, v. p. 296.*Fulmarus minor* (Kjærb.), Bp. Consp. Gen. Av. ii. p. 187 (1857).

*Am-Fulmaire*, Gaelic; *Pétrel-Fulmar*, French; *Eis-Mewensturmvoegel*, *Eis-Sturmvoegel*, German; *Noordsche Stormvoegel*, Dutch; *Is-stormfugl*, Danish; *Hævarhestur*, Færoese; *Kakordluk-Igarsok*, Greenlandic; *Fylingur*, *Fill*, Icelandic; *Havhest*, *Stormfugl*, Norwegian; *Storm-fogel*, *Malemack*, Swedish.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 59; Werner, Atlas, *Palmipèdes*, pl. 22; Kjærb. Orn. Dan. taf. 53; Naumann, Vög. Deutschl. taf. 276; Sundevall, Svensk. Fogl. pl. 79. fig. 4; Gould, B. of Eur. pl. 446; id. B. of G. Brit. v. pl. 82; Schlegel, Vog. Nederl. pl. 329; Audub. B. of Am. pl. 455.

*Ad.* capite, collo et corpore subtùs albis, gulâ vix flavido tinctâ: loris fumoso-griseis: corpore suprâ cinereo-cano, alis suprâ sordidioribus, uropygio pallidiore: remigibus fusco-cinereis: rostro flavido, naribus nigricantibus, cylindro supra rostrum pallidè viridi-flavo, mandibulâ viridi tinctâ: pedibus pallidè griseis: iride fuscâ.

*Jun.* adulto similis sed corpore suprâ sordidiore et magis fusco-cinereo, plumis pallidiore marginatis.

*Juv.* suprâ sordidè plumbeo-cinereus, subtùs pallidior, dorsi plumis sordidè fusco-cinereo marginatis.

*Adult Male* (St. Kilda). Head, neck, and underparts generally white, the throat slightly tinged with yellow; a dark spot in front of the eye; upper parts blue-grey, darker on the wings, and fading to greyish white on the tail; quills dark brownish ash; culmen to nares light sea-green; aperture of nares black; rest of the upper mandible split-pea yellow; lower mandible greenish yellow; legs delicate French grey; iris dark hazel-brown. Total length about 20 inches, culmen 1·8, wing 13·0, tail 5·2, tarsus 2·05.

*Young in second year* (St. Kilda, 22nd May). Resembles the adult, but has the upper parts more of a brownish ash-grey, the feathers having paler margins.

*Young* (Disco). General colour dull ashy grey with a bluish tinge, the underparts paler, the upper parts darker and more blue, most of the feathers on the back margined with dull brownish ash; quills as in the adult.

*Obs.* By some naturalists the dark grey bird has been looked on as distinct; but it would certainly seem to be only the young. Captain Feilden writes to me as follows:—"I have no doubt in my mind that the dark-coloured individuals are the young birds. In those that I have examined, the bill was smaller than in typical adult individuals of *Fulmarus glacialis*. Frequently I have captured Fulmars with a baited hook and line let out over the taffrail; and though the lighter and darker birds were equally numerous, I never saw one of the latter captured by this means, the lighter-coloured and, as I imagine, older birds invariably driving off the dark individuals before they could seize the bait." Professor Malmgren, who had ample opportunities of observing the present species in Spitzbergen, also says that he can positively state that the dark is the immature plumage, and adds that he saw birds in intermediate plumage, between the dark and the light, everywhere. Von Heuglin states (J. f. O. 1871, p. 206) that a pure white variety was obtained from Helis-sound, in East Spitzbergen, and adds that this form occurs now and then in Iceland.

THE present species inhabits the oceans which wash the shores of Northern Europe and America, breeding in the high north, and straggling further south in the winter season. In Great Britain it is only known as a very rare straggler, and does not breed in any part of the United Kingdom, except on the islands off the coasts of Scotland, especially on St. Kilda, where it is very numerous during the nesting-season. Yarrell says that it has been sometimes, but not often, shot on the coast of Wales, and has been obtained in Cornwall. One was obtained in Essex; and it has been occasionally shot or caught in Yarmouth Roads. Mr. Cordeaux writes (Birds of the Humber District, p. 210), the present species "has been obtained on several occasions during the last ten years on our east coast, but always, like so many ocean wanderers, in the autumn or winter months. One, a mature male, sent to Mr. Boulton in 1864, was killed on the 29th of October in that year on board a trawler off Flamborough Head (Zoologist, 1864, p. 9365). In November 1868, Mr. J. H. Gurney, jun., had four sent him, each in the flesh, by Mr. Roberts, of Scarborough; they were taken on board a fishing-yawl at sea, the men catching some with hooks, others by hand on the deck of the vessel as they were devouring the herrings. Mr. Gurney states that the Flamborough fishermen had that season seen scores of them off the coast about thirty miles from land. One in my possession, a storm-driven bird, was killed by a groom on the 18th of October 1867, in a turnip-field at Barnoldby-le-Beck; it was unwounded, but apparently incapable of rising from the land. The stomachs of Fulmar Petrels shot off this coast, examined by myself and Mr. Gurney, have contained the jaws of cuttlefish, as well as numbers of small globular semiopaque substances, apparently the air-bladders of some species of Algæ." "Off the coasts of Northumberland and Durham," according to Mr. J. Hancock (B. of North. & Durh. p. 132), it is "but a rare casual visitant. Many years ago I found a specimen washed up on Whitley Sands. Another example in my collection was picked up alive on the sands near Whitburn, on the 11th of October 1850; it was in a sickly condition, but not wounded. A second specimen was found dead in the same locality, March 1869; and an example, now in the collection of Mr. Raine, of Durham, was picked up dead on the sands at Bamborough, November 1872."

It does not breed on the mainland of Scotland, but only on the islands. Mr. Robert Gray writes respecting its occurrence there (B. of W. of Scotl. p. 499) as follows:—"The headquarters of the Fulmar are St. Kilda, Barra, and Soa, from which group of rocks it is but a straggler in the summer season to the Outer Hebrides. It formerly bred in the south isles of Barra, but has now entirely abandoned that locality, none having been seen there in the breeding-season since 1844. I was lately informed, however, by Captain Cameron, of Glenbrittle, that he has had the eggs of this species obtained in Skye, where it breeds in at least one locality—a 'stack' off the farm of Tallisker, halfway between Stack na Maidaidh and Breshal Beg. The nests are in holes in a very steep grassy slope, extremely difficult of access. The country people say there are many more breeding-places of this bird in Skye. The Fulmar would almost appear to have at one time bred in the island of Mull. Pennant, in his account of the species, copies the following paragraph from one of the newspapers of the day, the 'General Advertiser' for June 1761:—"Isle of Mull. A gentleman of the name of Campbell, being fowling among the rocks, and having mounted a ladder to take some birds out of their holes, was so surprised by one of these species spurring a quantity of oyl in his face that he quitted his hold, fell down, and perished." On three or four different occasions this bird has been met with in Iona; and Dr. Dewar has a specimen in his collection which he captured in summer off the coast of Skye: it is also found occasionally on the west side of the Long Island; but it is worthy of remark that in nearly every case these stragglers from the distant rock referred to are in an emaciated state. On the eastern shores of Scotland the Fulmar ranks only as a straggling winter visitant. In East Lothian it is occasionally found in December or January. I have seen specimens that were cast up dead on the beach near Dunbar. Northwards stray examples have been recorded from Caithness-shire and nearly all the intervening counties. These individuals probably come from breeding-haunts situated in the north-east of Scotland, although I cannot find any mention of such having yet been discovered." Dr. Saxby says that it never breeds in Shetland, and only frequents the "haaf."

In Ireland it is rarer than in England, and only three occurrences are cited by Thompson. It is said to be very common in most parts of Greenland, but is stated not to breed further south than in 69° N. lat. Captain Feilden writes of it (Ibis, 1877, p. 410) "Common in the north water of Baffin's Bay; and individuals followed our ships until we entered the pack off Cape Sabine. On the 26th June 1876, Lieutenant Parr and I, when travelling on the coast of Grinnel Land (lat. 82° 30' N.), observed one of these birds; and a few days later Lieutenant Egerton found one dead on the shore some two miles further to the northward. We did not observe this species again till our return to Baffin's Bay in September 1876." Professor Newton writes "it is abundant in many parts of the Icelandic seas, but never enters the bays. Faber says that the chief breeding-places are Grimsey, Látrabjarg, Krisuvikrberg, but especially on the Vestmanneyjar, where they are the commonest of all birds. He also mentions Hafnarberg as a nesting-locality; but I think he must have been misinformed; at least I saw or heard nothing of this species there in 1858, though it is very abundant round Eldey. On Grimsay a grey variety, known as 'Smiður,' is said to occur." In the Færoes it appears to have become much more common in recent years. Captain Feilden, in his notes on the ornithology of those islands, writes as follows:—"Svabo writes that in his day it was only seen by the fishermen far off the coast. Landt mentions that it is seen between the Shetlands and the Færoe Islands, and is known only to

those who fish a great way out at sea. I noticed it following the steamer after we got about thirty miles north of the Shetlands; and their number increased as we approached the Færoes, though they left us as we entered the Sound of Naalsoe, apparently not caring for the more settled waters of the fiords. Truly oceanic in their natures, they seem to exult in sailing down the trough of the huge Atlantic billows; and it is most interesting to watch their powers of flight: one steady flap, and then for several minutes they sail along without any apparent vibration of their wings, excepting when they change their course by a see-saw motion of the pinions. It was somewhere about 1839 that a few pairs of Fulmars were first discovered breeding at Qualboe, in Suderoe; now they are abundant there in the breeding-season, and have spread to Great Dimon, Skuoe, Myggenæs, Videroe, and Fugloe, in all of which islands it nests in large numbers. The natives value the young so highly as food, that it is difficult to induce them to let one take a few eggs. The Fulmar sits close, and does not move from the egg until the fowler is quite close: in many cases there would be no difficulty in capturing the old bird on the egg: this was done for me by a fowler at Myggenæs: the oil which exuded from this bird's bill when captured stained the feathers a delicate salmon hue." On the Scandinavian coasts it is rather rare than otherwise. According to Collett it occurs more or less numerously from the autumn to the spring, all along the coasts of Norway from East Finmark to Stavanger, and may possibly breed there within the Arctic circle. One, a young bird, was shot in the fiord off Christiania in December 1857. It may sometimes occur on the larger rivers; and Professor Newton mentions that Ludwig, his collector, wrote to him that he saw a "Hav-hest" at Kolari, on the Muonio, just above its confluence with the Torneå, as he descended the former river. It is common in Spitzbergen. Malmgren says that he found a breeding-place north of Brandywine Bay, in  $80^{\circ} 24' N.$  lat., inhabited by thousands of Fulmars, which were nesting from about 600 to 800 feet above the sea; and he remarks that the dark-grey bird is certainly the young bird. Professor Newton also writes (*Ibis*, 1865, p. 511) as follows:—"This is another of the birds which were found at the northernmost latitude attained by Parry's expedition. It is very abundant all round Spitsbergen, so far as my information goes. Dr. Malmgren found it breeding in thousands on the north side of Brandywine Bay, lat.  $80^{\circ} 24' N.$  It breeds besides, but in small numbers, on the Alkenhorn, whence, as I have said, I have an egg. Dr. Malmgren was good enough to present me with an egg from Bear Island, where it also breeds plentifully. Fulmars vary in size not inconsiderably; but I see no reason to believe in the existence of a second species, at least not in the northern hemisphere. Anton Rolandson Martin (who must not be confounded with Friedrich Marten) in 1758 visited Spitsbergen; but the only result of his voyage I can discover is a very good description of this bird and its habits, though he does not seem to have been quite clear about its synonymy." From the Norwegian coast to Novaya Zemlya the Fulmar was found numerously on the sea by Dr. Th. von Heuglin; but it does not appear to occur on the mainland of Russia.

After the breeding-season it occasionally straggles southwards, and has been met with off the coasts of the continent of Europe in several places. It is said to visit the coasts of Bohuslän, in Sweden, in November and December; but it does not ever penetrate far up the Baltic. Mr. Collin says (*Skand. Fugl.* p. 580), "Messrs. Hage and Scheel have once seen it in the winter off Möen; Mechlenburg saw one in Flensburg harbour on the 30th August 1838, after a

severe storm; and one is said to have been shot in November 1863 at Höier, in Western Schleswig." Naumann says that after heavy weather it is sometimes, though rarely, seen near Heligoland and off the mouth of the Elbe. Baron von Droste-Hülshoff writes (J. f. O. 1866, p. 391) that one was caught in an exhausted state on the shore of the island of Borkum; and two specimens, obtained off the coast of Holland, are in the Leiden Museum. It is also said to occur from time to time on the northern coasts of France, usually after severe storms; but it has not been met with on the southern coasts of Europe.

In the southern hemisphere the present species does not occur, and it is said to be replaced in the Pacific Ocean by an allied species, *Fulmarus rodgersi*, which is figured in Messrs. Dall and Bannister's article on the Birds of Alaska. This species is said to differ from *Fulmarus glacialis* in being rather smaller and in having the plumage tinged with uniform greyish brown.

Like its allies the present species is essentially a bird of the ocean, and comparatively seldom seen near land, except during the breeding-season and when driven in by severe tempests. I have only seen it skimming along the face of the ocean when I have crossed the Atlantic, and can give no details of its habits from personal observation. Dr. Saxby, writing on its habits as observed by him in Shetland, says (B. of Shetl. p. 362):—"The Fulmar is a bird which shows so many peculiarities as to render the fishermen not a little superstitious with regard to it; indeed they do not at all like to molest it, for fear of ill-luck ensuing, a Shetland fisherman's superstitions, from the moment of his leaving his cottage-door for the haaf until he sets foot on dry land on his return, being something almost incredible to the ordinary English mind. Other birds surrounding the boats at sea, one and all, appear rather afraid of it—its bulk scarcely exceeding that of a common Gull, and its ways of getting a living being sufficiently unobjectionable; at any rate, other birds avoid it as a rule. It can certainly take care of itself; and when interfered with while sitting upon the water, it draws back the head, ruffles the feathers, droops the wings, and opens the bill threateningly. When caught it bites very hard. It is seldom met with at a less distance than fifteen or twenty miles from the land. The open boats constantly go out thirty miles or so, fearful as is the risk; and it regularly approaches the boats from north or north-east, and retires towards the quarter whence it came, being always the most numerous before bad weather. In a strong wind, however, they do not very readily come from the windward.

"It will sometimes suddenly appear in great numbers when the lines are being hauled in, and is often so eager for food as to allow itself to be caught by hand, under which circumstances it does not vomit oil, as do the Shearwaters and Storm-Petrels. Occasionally it is so bold as even to snatch morsels of food out of the boat itself. No part of the fish comes amiss to it; but it greatly prefers the liver, a scrap of which it will see a very long way off; and often it will not care to touch any thing else, except any oil which may chance to be about, the sipping which up from the surface of the water affords it great pleasure.

"The faculties of the bird appear keen enough. Not a single Fulmar may be in sight; but let the bait be thrown out, and they will come in numbers, especially in the early morning, even in a thick fog; whence the men say they are guided by the scent. When a large morsel falls to its share, the bird sits on the water and tears it; but a small piece is either swallowed at once or carried away, the bird seldom eating otherwise than while sitting on the water, even alighting for the purpose."

Mr. G. Gillett, in his Notes on the Birds of Novaya Zemlya, says (Ibis, 1870, p. 307):—"This bird is a constant attendant on ships in the Arctic seas. Its flight is exactly like that of a Woodcock, as it skims over the waves with its large bright eye constantly peering into the water for the chance of blubber. It is easily caught with a baited hook, and when placed on deck is quite unable to rise or even to stand upright, but shuffles along by the help of its wings. It will readily eat blubber, however, directly it is caught, and when thrown overboard will come again at the hook without the least hesitation. It never, so far as I know, settles on flat ice; on one occasion only did I see one on the sloping side of an iceberg; usually it is on the wing or sitting on the water."

The Fulmar breeds on high rocks skirting the ocean, usually selecting almost inaccessible spots, where it is tolerably free from molestation. Macgillivray, jun., says (Brit. B. v. p. 431) that in St. Kilda it "breeds on the face of the highest precipices, and only on such as are furnished with small grassy shelves, every spot on which above a few inches in extent is occupied by one or more of its nests. The nest is formed of herbage, seldom bulky, generally a mere shallow excavation in the turf, lined with dried grass and the withered tufts of the sea-pink, in which the bird deposits a single egg." Speaking of its habits as observed by him on the island of St. Kilda during the breeding-season, he says, "On the 30th of June, having partially descended a nearly perpendicular precipice 600 feet in height, the whole face of which was covered with the nests of the Fulmar, I enjoyed an opportunity of observing the habits of this bird which has fallen to the lot of few of those who have described them as if from personal observation. The nests had all been robbed about a month before by the natives, who esteem the eggs of this species above all others, those of the Auk, Guillemot, Kittiwake, and Puffin ranking next, and the Gannet, Scart, and Cormorant last of all. Many of the nests contained each a young bird, a day or two old, thickly covered with long white down. Such of the eggs as I examined *in situ* had a small aperture at the broad end, at which the bill of the chick was visible, sometimes protruding a little way. Several addle eggs also occurred. The young birds were very clamorous on being handled, and vomited a quantity of clear oil, with which I sometimes observed the parent birds feeding them by disgorging it. The Fulmar is stated in most works on ornithology to possess the power of ejecting oil with much force through its tubular nostrils, using this as a mode of defence; but, although I surprised several upon the nest, I never observed them attempt this. On being seized they instantly vomit a quantity of clear amber-coloured oil, which imparts to the bird, its nest, and young, and even the very rock which it frequents, a peculiar and very disagreeable odour. Fulmar-oil is among the most valuable productions of St. Kilda, and is procured of two kinds by different processes. The best is obtained from the old bird by surprising it at night upon the rock, and tightly closing the bill until the fowler has secured the bird between his knees with its head downwards. By opening the bill the Fulmar is allowed to disgorge about a tablespoonful, or rather more, of oil into the dry gullet and stomach of a Solan Goose, used as a reservoir for that purpose. These, when filled, are secured with a string, and hung on cords across the interior of the huts until required for use. The oil thus procured and preserved, besides supplying their lamps, is used by the inhabitants as a medicine, being sometimes of considerable efficacy in chronic rheumatism, and acting as a cathartic; while, from its nauseous taste and smell, it would doubtless prove an

effectual emetic also to any but a St.-Kildian. In the beginning of August the natives descend the rocks for the young Fulmars—which are then nearly fledged, and by boiling with water in proper vessels are made to furnish a large quantity of fat, which is skimmed off and preserved in casks in the solid form. The old Fulmar is much esteemed as food by the St.-Kildians, principally on account of its subcutaneous covering of fat, a substance of which they are immoderately fond. One which I had the curiosity to taste unexpectedly proved tolerable enough, after the envelope in question had been removed. Perhaps the keenness of my appetite deceived me, as it was not blunted by the following bill of fare:—Fulmar, Auk, Guillemot, one of each, boiled; two Puffins, roasted; barley-cakes, ewe-cheese, and milk; and, by way of dessert, raw dulse and roasted limpets *ad libitum*.

“It is chiefly in pursuit of the Fulmar that the St.-Kildian requires to endanger his life, by descending the tremendous precipices, on the faces of which it breeds in almost incredible numbers. Their mode of procedure is as follows:—Two men go in company, each furnished with several coils of rope, about half an inch in diameter. The person whose turn it is to descend fastens one of the ropes under his arm-pits, and, holding the extremity of another rope in one hand, is lowered down the cliff. His comrade stands a little way from the edge, holds the supporting rope firmly with both hands, letting it go very slowly, while he allows the other or guide-rope to slip out as is required from under one foot, which loosely secures it. When the rope is all run out, another is joined to it by means of a noose with which it is provided, and the line is thus lengthened to any degree. On arriving at a ledge occupied by birds the fowler commences his operations, easily securing the eggs and young birds, knocking down the old ones with a short stick, or catching them by a noose attached to a slender rod, killing them in a moment by dexterously bending the head backwards upon the neck. He then secures his sport by bundling the birds together and tying them to a rope let down from above, depositing at the same time in a small basket the eggs which he had collected. The dexterity of these rockmen is truly astonishing. The smallest spot is considered by them as a secure enough standing-place; and they will creep on hands and knees, though cumbered with a load of birds, along a narrow ledge, seemingly without concern for their personal safety.

“The Fulmar flies with great buoyancy and considerable rapidity, and when at sea is generally seen skimming along the surface of the wave at a slight elevation, though I never observed one to alight or pick up any thing from the water. Several which I dissected had the stomach filled with pure oil, mixed up with the indigestible horny mandibles of some of the Sepiadæ, which, we may conclude, form their principal food. It is partially a nocturnal bird; for I seldom observed it at any distance from St. Kilda except during the evening and about day-break, at the latter time always flying in the direction of St. Kilda as if hastening homewards. I have also on one or two occasions, when at sea engaged in cod-fishing to the westward of the Harris Islands, in very gloomy and rainy weather, observed a few Fulmars flying about the boat, probably attracted by the fish we had caught. At its breeding-places, however, the Fulmar is always in motion, comparatively few being to be seen upon the rocks, the great mass being engaged flying in circles along the face of the precipice, and always in the same direction, none crossing, probably on account of the confusion it would cause among such an immense multitude. I never observed them utter any cry when thus engaged, or even when their nests were being

robbed. The Fulmar does not allow itself to be handled with impunity, but defends itself with its powerful bill, which it can use with as much effect as goodwill."

The egg of the present species is about the size of that of the domestic fowl, pure white in colour, rather rough on surface of shell, and has a strong musky smell.

When I wrote the article on the Storm-Petrel I was of opinion that *Procellaria* would have to be the generic name for the Fulmars, and consequently used *Thalassidroma* for that species. Since then, however, I find that the type of *Procellaria* is the common Storm-Petrel, and another generic name will have to be used for the present species, which will therefore have to stand as *Fulmarus glacialis*.

The specimens figured are an adult bird and a young bird in the plumbeous grey dress.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ad., *b*, ♀ juv. St. Kilda (*H. J. Elwes*).

*E Mus. Brit. Reg.*

*a*, ad. Yarmouth. *b*. St. Kilda. *c*, *d*. Greenland. *e*. Spitzbergen.

*E Mus. Feilden et Harvie-Brown.*

*a*, ♂ ad. Davis Straits, June 23rd, 1875 (*H. W. Feilden*). *b*, juv. Disco (*H. W. F.*).

Genus *ÆSTRELATA*.

*Procellaria* apud Kuhl, Beitr. Zool. i. p. 142 (1820).

*Puffinus* apud Lafresnaye, Rev. Zool. ii. p. 102 (1839).

*Fulmarus* apud Bonaparte, Compt. Rend. xlii. p. 772 (1855).

*Æstrelata*, Bonaparte, ut suprà (1855).

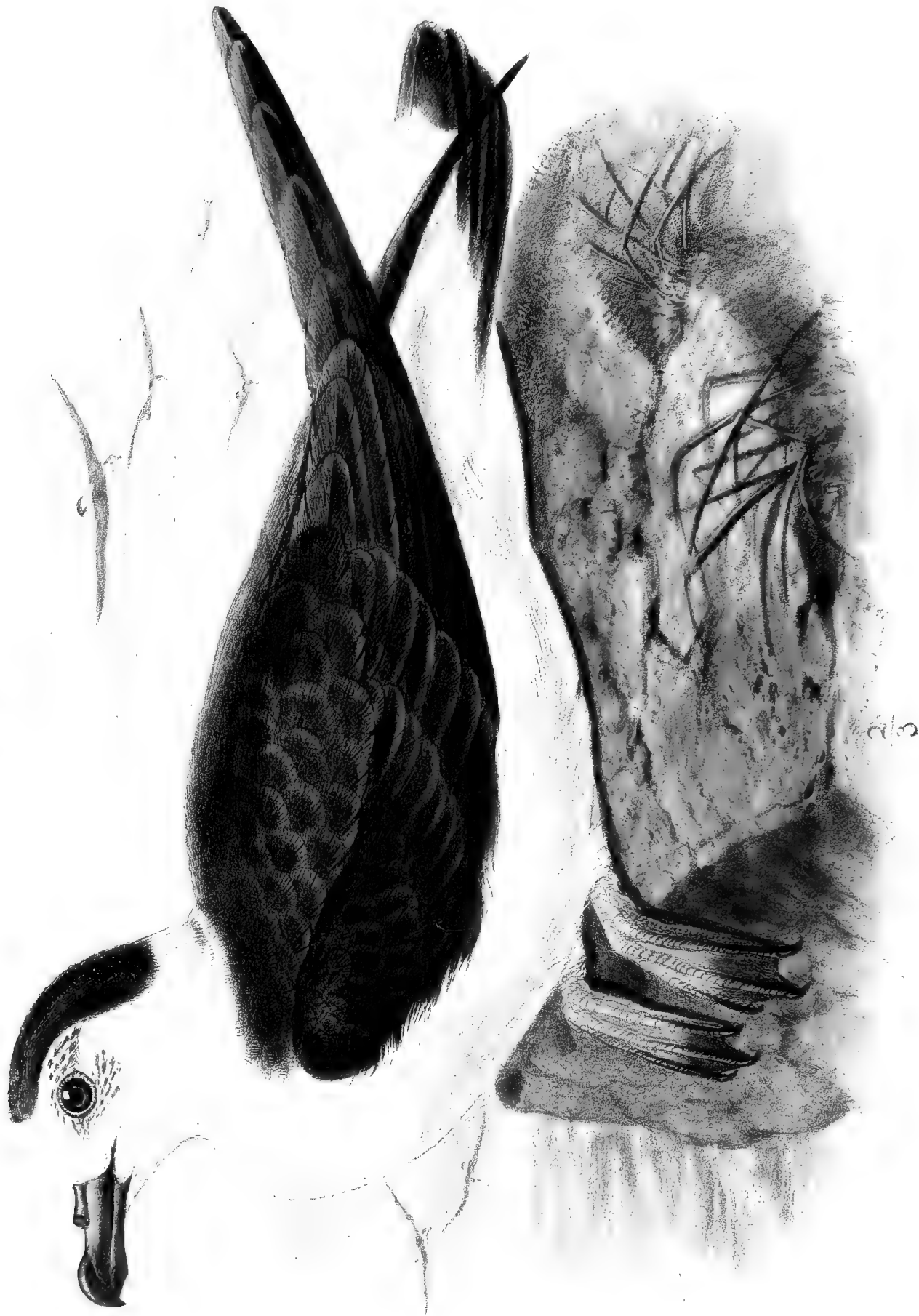
*Æstrelata*, Newton, Ibis, 1870, p. 277 (ex Bonaparte).

THE birds belonging to the present genus inhabit the North and South Pacific and Atlantic Oceans, only one species occurring as a rare straggler within the limits of the Western Palæarctic Region. They are said to resemble the Shearwaters in their general habits; and like them they are to a large extent nocturnal, especially during the breeding-season; for they remain hidden during the day, and emerge only in the evening to range about the sea in search of their food, which is said to consist almost entirely of fish. They burrow in the ground like rabbits, and are said to deposit two white eggs at the end of their nest-hole, which is sometimes tolerably long.

*Æstrelata hesitata*, the type of the genus, has the bill stout, compressed, rather shorter than the head, straight for some distance, then ascending at the commencement of the unguis, which is sharply decurved, with an acute tip; nasal tubes moderately long, elevated, conspicuous, the dorsal outline straight, the orifice subcircular; wings long, pointed, extending beyond the tail when folded, the first quill longest, the second scarcely shorter; tail long, graduated; feet of moderate size, the tarsus reticulated; hind toe small, elevated; anterior toes moderate; claws curved, moderately acute.







W Hart del.

CAPPED PETREL.  
CESTRELATA HÆSITATA.

J. V. de.

## ÆSTRELATA HÆSITATA.

(CAPPED PETREL.)

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- Diabie* ou *Diablotin*, Labat, Nouv. Voy. aux Isles de l'Amérique, i. p. 109 (1724).  
*Procellaria hasitata*, Kuhl, Beitr. Zool. i. p. 142 (ex MS. Forster. sed errore, 1820).  
*Procellaria hasita*, Less. Traité d'Orn. p. 611 (1831).  
 "Puffinus l'herminieri, Less.," Lafresn. Rev. Zool. ii. p. 102 (1839).  
 "Procellaria diabolica, L'herminier, MS.," Lafresnaye, Rev. Zool. 1844, p. 168.  
*Procellaria meridionalis*, Lawr. Ann. Lyc. N. H. New York, iv. p. 475 (1848).  
*Procellaria rubritarsi*, Gould, Zool. p. 3692 (1852).  
*Procellaria hæsitata* (Kuhl), A. Newton, Zool. p. 3693, fig. (1852).  
*Fulmarus meridionalis*, Bp. Compt. Rend. xlii. p. 772 (1855).  
*Æstrelata diabolica* (Lafr.), Bp. loc. cit. (1855).  
*Procellaria brevirostris*, Lawrence olim, Coues, Proc. Ac. N. S. Phil. p. 140 (nec Less. 1866).  
*Æstrelata hæsitata* (Kuhl), Elliot, B. of N. Am. part x. (1868).  
*Æstrelata hæsitata* (Kuhl), A. Newton, Ibis, 1870, p. 277.

### *Figuræ notabiles.*

Newton, *l. c.*; Yarr. Brit. B. iii. pl. to p. 643; Temm. Pl. Col. 416; Elliot, *l. c.*

*Ad.* pileo saturatè fusco: fronte, gulâ, gutture, collo postico et corpore subtùs albis: facie albâ, regione circumoculari fusco notatâ: corpore suprâ et alis fuscis cinereo tinctis, his saturationibus: caudæ basi albâ, caudâ reliquâ fuscâ: tectricibus alarum pallidiore terminatis: tarsis et pedibus ad basin carnis, his nigro terminatis: rostro nigro, iride fuscâ.

*Adult* (Swaffham, *fide* Prof. Newton). "The whole of the beak black; from the crown of the head to the nape of the neck the feathers are white at the base, broadly tipped with dark brown, so as to present, except at the edges of the patch, which is nearly circular, a uniform surface of the latter colour; in front and below the eye are a few greyish-black feathers extending over the ear-coverts; the orbits are surrounded with a ring of sepia-brown feathers. The forehead, face, neck, breast, belly, sides, and under tail-coverts are nearly pure white; but there are also a few dark feathers on the flanks. The beak and shoulders are covered with greenish-grey and blackish-brown feathers, the former appearing to have been but lately assumed; but many of the latter are sedgy and worn at the edges: all these feathers are white at the base; but that colour does not show on the surface. The rump and upper tail-coverts are white, the feathers of the latter elongated. The tail is rounded, and consists of twelve feathers, the outer pair white edged and broadly tipped with blackish brown; the next four pair are similarly coloured, but only slightly edged, the tips of each pair being darker as they approach the middle; the shafts of the quills in all these are white; the middle pair of quills are brownish black nearly all their length, their basal being white, and have their shafts corresponding in colour to their webs. The wing-coverts are blackish brown, bordered with a lighter shade of that colour, the borders of the middle and lower coverts being so broad as to appear like two light-coloured bars across the

wing; the quill-feathers are blackish brown, with shafts of the same, the first quill-feather being the longest; the under surface of the wings, so far as can be seen, is white. The naked parts of the tibiae, the tarsi, and the basal halves of the toes and interdigital membranes appear to have been dusky yellow; the rest of the feet and claws are black. The specimen was a female; and when newly killed the irides were hazel-brown."

*Obs.* It appears that when the bird is alive the basal halves of the toes, the tibiae, and tarsi are flesh-colour.

*Juv.* (Hayti). Crown and nape blackish brown; the sides of the forehead white marked with brown; hind neck, fore part of the face, entire throat, and underparts white; back and upper parts dull brown, the margins of the dorsal feathers lighter; quills dark brown; tail dark brown, except at the base, where it is dull white, very much rounded in shape. Total length about 14 inches, culmen 1·7, wing 11·4, tail 6·2, tarsus 1·52.

THERE are few birds amongst those which are included in the European list about which less is known than the present species; and all that I can say respecting its range is that it inhabits the Atlantic Ocean; but how far to the north and to the south it ranges I am unable to determine.

Its claim to be considered European rests on two occurrences—one in England, as below stated, and one in France; for there is an example in the Museum at Boulogne, which is said to have been shot near that town some years ago by a sportsman (M. Lebeau Longuety), who presented it to the Museum. The specimen obtained in England was "observed by a boy on a heath at Southacre, near Swaffham, in Norfolk, flapping for some time from one furze bush to another; at length it got into one of the bushes, and was then secured by him: exhausted as it was, it had strength enough remaining to bite violently the hand of its captor, who thereupon killed it. Mr. Newcome, of Hockwold Hall, near Brandon, fortunately happened at the time to be hawking in the neighbourhood of Swaffham; and his falconer John Madden observing the boy with the dead bird, procured it from him, and brought it to his master, by whom it was skinned and mounted, and in whose possession it now is. This took place in the spring of 1850." Professor Newton, who was the first to record the above capture, and who determined the species to which the bird belonged, published a detailed account in the 'Zoologist' (1852, p. 3691), together with two illustrations.

Dr. Coues gives the range of this species as the "Atlantic ocean, coasts of America and Europe," and says that there is a specimen in the museum at Philadelphia from the Atlantic coast. Two specimens in the Leyden Museum were recorded by Schlegel as being from "Océan"—a very vague statement as to the locality. One was said to have been obtained on the voyage of the 'Gazelle;' but Dr. Peters now informs me that it is not referable to this species. In the British Museum there is a specimen from Hayti; and Mr. Gould mentions having seen specimens in France, stated to have been brought from the West Indies, and adds that he remembers having seen others of this Petrel in abundance off the western isles. It appears, as far as I can gather, that the true home of the Capped Petrel is the Lesser Antilles. Père Labat, who went to the Antilles in 1693, and remained there twelve years, speaks of a bird under the names of "Diable" and "Diablotin," which it is now generally admitted was the Capped Petrel. This gentleman, who gives some interesting details respecting the habits and nidification of this

rare Petrel, says (*l. c.*) that he does not know of their being found in any other island of the Antilles, except on Guadeloupe and Dominica, whither they resort for the purpose of nidification. He states that they are entirely nocturnal in their habits, and when disturbed and turned out of their hiding-places in the daytime they are completely dazed and fly up against any thing that may be in their way. They feed at night on fish, and during the daytime hide in holes in the mountains like rabbits. When flying about, they utter cries as if calling and replying to each other.

They appear late in September, and are then found in pairs, each pair in a separate hole. They remain until the end of November, when they disappear until January. On reappearing they inhabit separate holes until March, when two young ones are found in the hole with the female. These little ones are covered with soft down, and are yellow like Goslings; they are in very good condition, being literally lumps of fat. Late in May they are able to fly; and one then loses sight of them until the end of September. Their flesh is blackish, and smells somewhat of fish, though it is good and nourishing. The young are esteemed a great delicacy, but are too fat.

Père Labat gives (pp. 110, 111) a long account of the mode in which these birds are caught, and remarks that they would have been exterminated long previously were it not for the difficulty in catching them, as they take refuge in the most inaccessible places. He describes the mountain as being honeycombed with the holes made by these birds, and says that they are caught with a long stick having a crook at the end. A dog is employed to examine the hole; and as soon as he finds that it is tenanted he commences to scratch: but he must be called off at once; for if the entrance to the hole should be damaged the birds will not use it again. So soon as a hole is found to be tenanted the stick is inserted until it touches the bird, which generally takes hold of it, and allows itself to be drawn to the entrance; but as soon as it is brought to daylight it will go back, unless prevented by placing the foot at the entrance to the hole, when the bird will throw itself on its back to defend itself with beak and claws; and it may then be caught and killed. Should the bird not grasp the stick, it is drawn out by twisting the stick about until one gets hold of it with the crook. In one afternoon four negroes who accompanied Père Labat caught 138, a creole 43, and he himself 17, making a gross total of 198. In vol. ii. p. 443, Père Labat gives a long and most amusing account of a discussion he had with a friend, a Protestant, who insisted that this bird could not possibly be reckoned as being "fish" diet, and eaten on fast-days, whereas the père held that, as he was permitted by his clerical superiors to eat it on these days, it could not be really any thing else, though his own common sense evidently showed him that he had the worst of the argument, in which, however, he could not be prevailed upon to admit himself worsted. Lafresnaye, who identifies (*l. c.*) the Diable or Diablotin of Père Labat with the *Procellaria diabolica* of l'Herminier, says that there are two distinct species—one arriving late in September and nesting in December, and the other differing only in size, and not in plumage, being rather smaller, arriving at another season, and nesting in the same places, but at a different altitude. The one of these is in Guadeloupe called the "Pétrel des hauts," and the other "Pétrel des bas."

I do not possess an example of this rare bird, and have only examined the single specimen in the British Museum. The description of the adult bird is copied from Professor Newton's

description of the Swaffham bird; and I am indebted to Mr. Stevenson for the loan of a drawing by Wolf of this bird, from which my Plate is taken. I am also indebted to Professor Newton for much valuable assistance in working out the synonymy of this species.

I may here mention that Mr. F. A. Ober lately observed a bird in Dominica called the "Diablotin," which Professor Baird believes to be *Prion caribbæus*, but which, it appears to me, must be the Capped Petrel. Mr. Ober, however, did not obtain a specimen.

## Genus BULWERIA.

*Procellaria* apud Jardine, Edinb. Journ. Nat. & Geogr. Sc. i. p. 245 (1830).

*Thalassidroma* apud Bonaparte, Comp. List, p. 64 (1838).

*Puffinus* apud Moquin-Tandon, Orn. Canar. p. 44 (1841).

*Bulweria*, Bonaparte, Cat. metod. Ucc. Eur. p. 81 (1842).

*Æstrelata* apud Coues, Proc. Acad. Nat. Sc. Philad. 1866, p. 158.

*Pterodroma* apud Giglioli & Salvadori, Ibis, 1869, p. 66.

THIS genus contains but two species—*Bulweria columbina*, which inhabits the Atlantic Ocean only, and is found chiefly on or near the Canaries and Madeira, and *Bulweria macgillivrayi*, which inhabits the Fiji Islands. These birds are said to resemble the Petrels more than any other group of birds in their general habits, and like them frequent the ocean, resorting to desert islands to breed, and depositing one tolerably large pure white egg in the fissures of the rocks.

*Bulweria columbina*, the type of the genus, has the bill about as long as the head, stout at the base, compressed throughout, the unguis large, and rising almost immediately from the nostrils, tubular, the tube dorsal, rather short and stout; wings long, pointed, the first and second quills about equal in length; tail long and cuneate; legs moderate, the tibia bare for a short distance, tarsus reticulated; hind toe very small indeed, elevated, anterior toes rather long and slender, the outer and middle toes about equal in length, the inner one much shorter; claws rather short, slender, curved, acute.



## BULWERIA COLUMBINA.

(BULWER'S PETREL.)

*Procellaria bulwerii*, Jard. & Selby, Illustr. of Orn. pl. 65 ; Jard. Edinb. Journ. Nat. & Geogr. Sc. i. p. 245 (Jan. 1830).

*Thalassidroma bulweri* (Jard. & Selby), Bp. Comp. List, p. 64 (1838).

*Puffinus columbinus*, Moq. Tand. Orn. Canar. p. 44 (1841).

*Procellaria columbina*, Moq. Tand. op. cit. pl. 4. fig. 2 (1841).

*Bulweria bulweri* (Jard. & Selby), Bp. Cat. Metod. Ucc. Eur. p. 81 (1842).

*Bulweria columbina* (Moq. Tand.), C. L. Brehm, Vogelfang, p. 354 (1855).

*Æstrelata bulweri* (Jard. & Selby), Coues, Proc. Acad. Nat. Sc. Philad. 1866, p. 158.

*Pterodroma (Æstrelata) bulweri* (Jard. & Selby), Giglioli & Salvad. Ibis, 1869, p. 66.

*Figuræ notabiles.*

Jardine & Selby, *l. c.*; Webb, Berthelot, & Moquin Tandon, Orn. Canar. pl. 4. fig. 2;  
Gould, B. of Eur. pl. 448.

*Ad.* fuliginoso-nigro-fuscus, corpore suprâ saturatiore, corpore subtùs pallidiore et magis brunneo colorato : alis nigro-fuscis, tectricibus alarum majoribus ad apicem pallidè et sordidè fuscis : caudâ nigrâ, cuneatâ : rostro nigro : iride fuscâ : pedibus fuscis.

*Juv.* adulto similis.

*Adult Male* (Deserta). Entire plumage sooty brownish black, the upper parts darker, and the underparts paler and browner; wings blackish brown; larger wing-coverts dull light brown at the tips; tail black, cuneate, the central feathers about 1·5 inch longer than the outermost ones; bill black; iris deep brown; legs brown. Total length about 10 inches, culmen 1·0, gape 1·2, wing 7·7, tail 4·5, tarsus 1·1.

*Adult Female.* Resembles the male.

*Young.* When hatched the young bird is said to be covered with dark sooty-brown down, after which it assumes a plumage similar to that of the adult.

THE present species is restricted entirely to the Atlantic Ocean, being met with chiefly on or near the Canaries and Madeira. It has, however, straggled as far north as the British Isles, where two examples are said to have been obtained—one on the Ure, near Tanfield, in Yorkshire, on the 8th May, 1837, and one off Scarborough in the spring of 1849. Except these two instances I do not find it recorded from anywhere excepting in the vicinity of the Canaries and Madeira. Messrs. Webb, Berthelot, and Moquin Tandon state (*l. c.*) that Bulwer's Petrel "is very common on the small island of Alegranza, where it breeds in holes in the rocks. Its cry resembles that of a puppy; and from this it gets its name of 'Perrito.' When at Lanzarote we

kept several of these Petrels, which we brought from Alegranza, alive for several days. They were very fat, and lived some time without food."

Mr. F. DuCane Godman writes (*Ibis*, 1872, p. 223):—"I found the present species breeding in considerable numbers on the small Deserta. It appears so nocturnal in its habits that I never once saw it flying about in the day-time, though there were plenty of another, smaller species. The nests I found were for the most part low down at the foot of the cliffs, under the fallen rocks, where the birds were easily caught with the hand while sitting on their eggs." Mr. Edward Newton states (*Ibis*, 1859, p. 372) that near the harbour of Christiansted, St. Croix, he saw some Petrels which he believes to have been Bulwer's Petrels, but he was unable to procure one so as to convince himself on the subject. Otherwise I do not find Bulwer's Petrel recorded from other parts of the Atlantic than those above given, except that Schlegel says he possesses a specimen from Greenland; and its range seems altogether to be very small. Another tolerably closely allied species, *Bulweria macgillivrayi* (G. R. Gray), inhabits the Feejee Islands, and is stated to differ from the present species in lacking the brown on the wings, and in having a larger bill.

Professor Newton sends me the following notes:—"In or before 1850, Dr. Frere learned from a friend (the late Mr. T. Vernon Wollaston, if I am not mistaken) that four or five species of Procellariidæ frequented the Dezertas and bred there. Dr. Frere immediately took steps to obtain examples of these birds and their eggs, and towards the end of the summer of 1850 received from Madeira a consignment consisting of the skins and eggs of what in those days we used to call *Puffinus major*, *P. obscurus*, *Thalassidroma leachi*, and *T. bulweri*. There could be no doubt whatever about the last; for Dr. Frere's friend took some of the eggs himself, kicking the bird off them. The next year he had a still larger collection sent; and, if I remember right, more followed. The Doctor was extremely liberal in distributing his booty; and I among others shared his bounty, and now possess several eggs and a skin of Bulwer's Petrel thus obtained. The former are of a pure white, and measure from 1.59 to 1.76 inch by from 1.17 to 1.23 inch."

"Dr. Heineken has described in the 'Edinburgh Journal of Science' for October 1829 (new series, i. p. 231), under the name of *Procellaria anjinho*, a species of Petrel which he observed on ten uninhabited and unfrequented islands near Madeira and Porto Santo. This would appear greatly to resemble the *P. bulweri* of Jardine and Selby; but it is said to have the 'tail slightly forked,' whereas the tail in the latter is wedge-shaped; and Jardine (*ut supra*) states that 'it certainly cannot be referred' to that species, and 'must, therefore, stand as new.' Notwithstanding this, the authors of the 'Ornithologie Canarienne' quote Heineken's name and description of the habits of his bird as referring to their *P. columbina*, which last is admittedly identical with the *P. bulweri* of Jardine and Selby. No bird absolutely answering to the description of Heineken has since been recognized by ornithologists; and it would therefore seem as though this author may have been in error as to the form of the tail in his species, or else that there is a second species inhabiting the Madeiras which has not been met with since Heineken's time. His specific name *anjinho* (pronounced as though spelt An-ji-gno in Italian) is the Portuguese word meaning 'little angel,' but figuratively, perhaps, 'imp;' for, as he remarks, 'there is certainly more of darkness than of light both in its hue and habits.' He says it appears first in February or March, and begins to lay early in June. The young are

hatched in July; and after September few or none are seen till the following spring. It is never seen in the bay nor in flocks, but keeps out at sea, and is, in a great measure, nocturnal in its habits. He says it breeds in considerable numbers on the 'Denetas' (an obvious misprint for the Dezertas), and that its young are taken and salted indiscriminately with those of the *Puffinus* the 'Cagarra,' which also breeds there. He failed to obtain a specimen before May 1828, when he met with several at Porto Santo. Altogether it would seem that, even if Heineken's *P. anjinho* be a distinct species, he has in his account of its habits confounded it with the *P. bulweri* of Jardine and Selby, which, as stated above, is known to breed abundantly on the Dezertas." Were it not that *Bulweria* has been adopted as a generic term for this species, *bulweri* would be the correct specific name; but as this is the case, *columbina* will have to be used, and I follow Brehm, and most of the more recent authors, in calling it *Bulweria columbina*.

The specimen figured, on the same Plate with Wilson's Petrel, is the bird above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a, ad. Dezertas (Dr. Frere). b, ♂ ad. Dezertas (F. D. Godman).*



## Order VII. ALCÆ.

### Family ALCIDÆ.

#### Genus ALCA.

*Alca*, Brisson, Orn. vi. p. 85 (1760).

*Uria* apud Brisson, Orn. vi. p. 70 (1760).

*Alca*, Linnæus, Syst. Nat. i. p. 210 (1766).

*Colymbus* apud Linnæus, tom. cit. p. 220 (1766).

*Pinguinus* apud Bonnaterre, Encycl. Méthod. i. p. 28 (1790).

*Torda* apud Duméril, Zool. Anal. p. 73 (1806).

*Utamania* apud Leach, Syst. Cat. M. & B. Brit. Mus. p. 42 (1816).

*Plautus* apud Steenstrup, Naturl. Foren. Vidensk. Meddel. 1855, p. 114.

*Catarractes* apud Bryant, Mon. Gen. *Catarr.* in Proc. Bost. Soc. N. H. 1861, p. 6.

*Lomvia* apud Coues, Proc. Acad. Nat. Sc. Phil. 1868, p. 75.

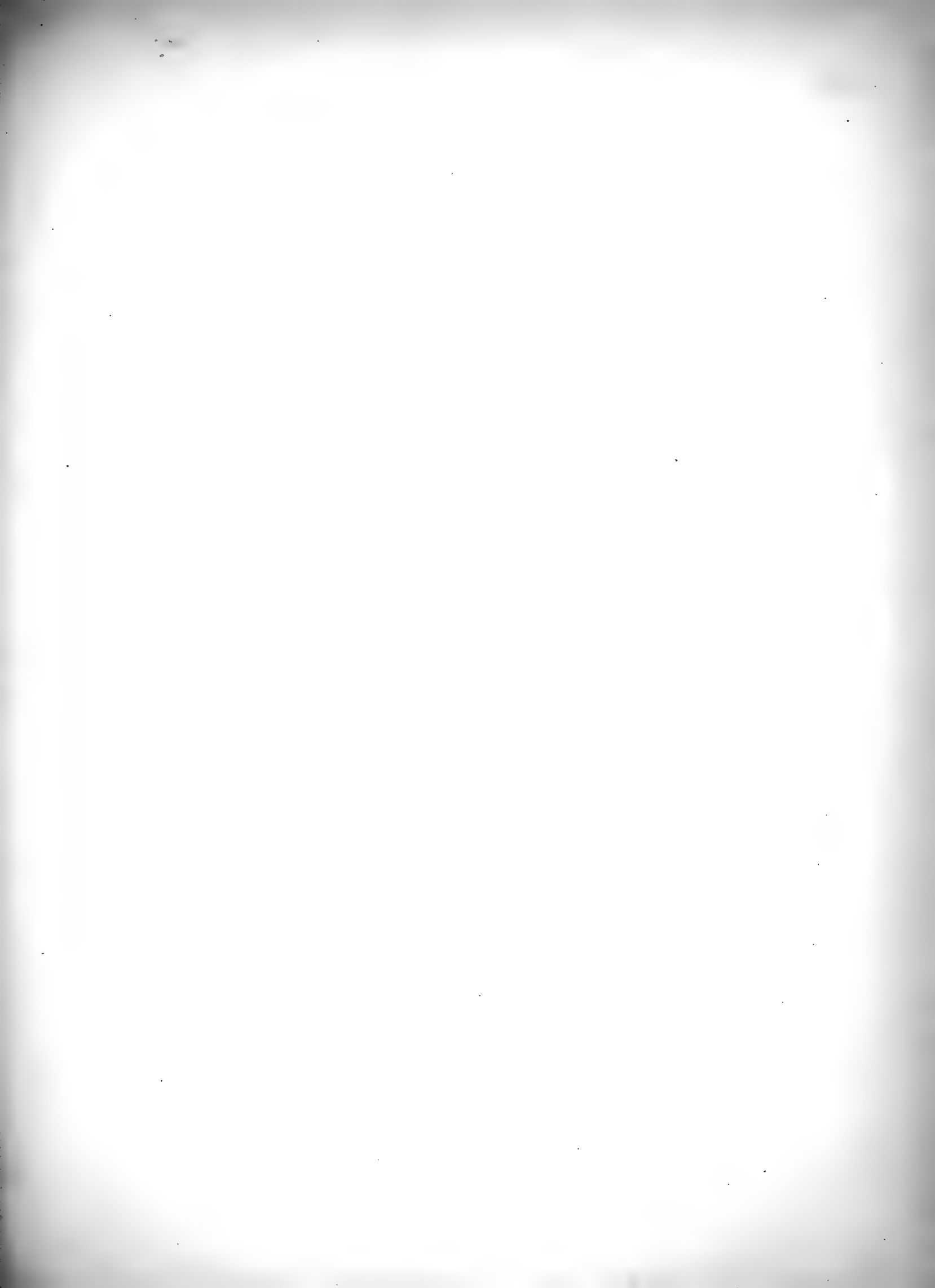
*Chenalopex* apud G. R. Gray, Hand-l. of B. iii. p. 95 (1871).

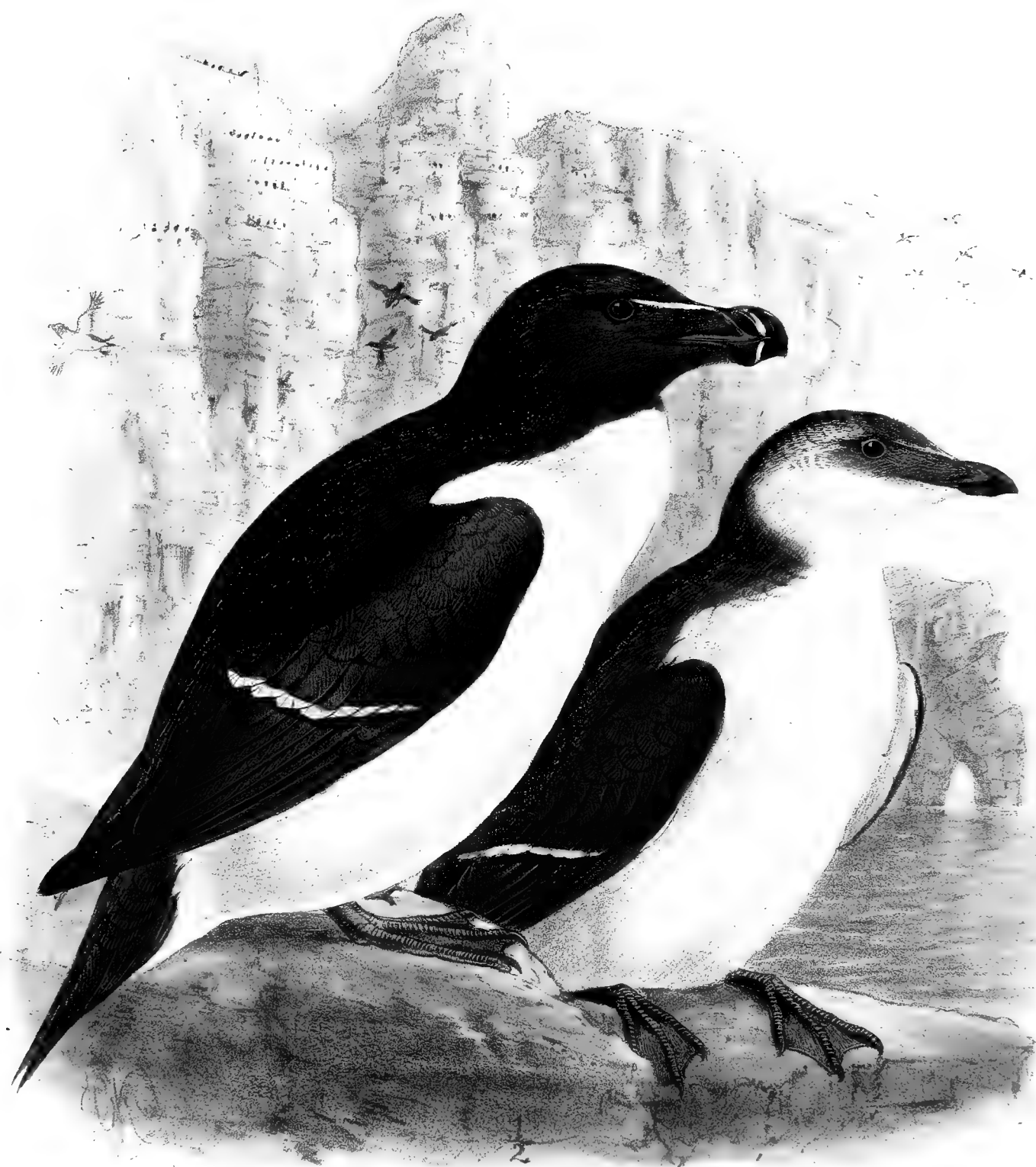
THE Auks inhabit the northern portions of both the Palæarctic and Nearctic Regions, four species being found within the limits of the Western Palæarctic Region. By many authorities the larger Guillemots have been separated from the Auks and placed in a genus by themselves, *Uria* being the generic title usually made use of for them; but I have deemed it advisable to follow Schlegel in uniting the larger Guillemots with the Razorbills in the genus *Alca*. I have, however, separated the Black Guillemot and its allies, placing them in the genus *Uria*.

The species belonging to the genus *Alca* frequent the ocean, and are frequently found far from land. They swim and dive with great facility, and use their short, firm wings in propelling themselves under the water. Having their feet placed so far behind, they walk badly and stand in an upright position. They feed on small fish, mollusca, crustacea, &c., and obtain their food chiefly by diving. They are gregarious, and are usually found, both in the breeding- and at other seasons of the year, in considerable numbers. They place their single egg, which is richly blotched with colour on a greyish, greenish, bluish, or pale-brown ground, on a ledge in the cliffs, not making any nest.

*Alca torda*, the type of the genus, has the bill slightly shorter than the head, stout, much higher than broad at the base, the dorsal line arcuate and decurved, the ridge very narrow, the sides erect and transversely grooved, the edges sharp, the lower mandible with the dorsal line ascending, and concave towards the end; nasal sinus broad, feathered, the nostrils linear and in the lower anterior portion; wings short, pointed, the first quill longest; tail moderate, cuneate; legs stout, short, placed far behind; tibia feathered nearly to the joint; tarsus stout, anteriorly scutellate, laterally and posteriorly covered with small roundish scales; hind toe wanting; anterior toes moderately long, connected by webs, the inner toe much shorter than the outer ones; claws stout, slightly curved, obtuse, that on the middle toe with the inner edge dilated.







Alca torda

W. W. Hartshorn

RAZORBILL.  
ALCA TORDA

## ALCA TORDA.

(RAZORBILL.)

*Alca torda*, Linn. Syst. Nat. i. p. 210 (1766).*Alca pica*, Linn. ut suprâ (1766).*Le Pingouin*, Buff. Hist. Nat. Ois. ix. p. 390, pls. 27, 28 (1783).*Alca baltica*, Gmel. Syst. Nat. i. p. 551 (1788).*Pinguinus torda* (L.), Bonnat. Encycl. Méthod. i. p. 29 (1790).*Pinguinus pica* (L.), Bonnat. tom. cit. p. 30 (1790).*Utamania torda* (L.), Leach, Syst. Cat. M. & B. Brit. Mus. p. 42 (1812).*Utamania pica* (L.), Leach, ut supra (1812).*Alca glacialis*, C. L. Brehm, Vög. Deutschl. p. 1004 (1831).*Alca islandica*, C. L. Brehm, Vög. Deutschl. p. 1005 (1831).*Alca balthica*, C. L. Brehm, Vogelfang, p. 410 (1855).*Alca microrhynchos*, C. L. Brehm, Vogelfang, p. 410 (1855).

*Coltraiche*, *Dui-Eunach*, Gaelic; *Pingouin macroptère*, French; *Gazza marina*, Italian; *Tordalk*, *Klubalk*, *Eisalk*, German; *Alk*, Dutch; *Almindelig Alk*, Danish; *Alka*, Færoese; *Akparnak*, *Akpartluk*, Greenlandic; *Alka Klumba*, Icelandic; *Brednæbbet Alke*, Norwegian; *Tordmule*, Swedish; *Ruokki*, Finnish.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 1003, 1004; Werner, Atlas, *Palmipèdes*, pl. 73; Kjærb. Orn. Dan. taf. 52, Suppl. taf. 35; Naumann, Vög. Deutschl. taf. 336; Sundevall, Svensk. Fogl. pl. 52. fig. 2; Gould, B. of Eur. pl. 401; id. B. of G. Brit. v. pl. 47; Audub. B. of Am. pl. 214.

*Ad. ptil. æst.* capite, collo et corpore toto suprâ nigris, capitis lateribus et gulâ fusco-nigris, lineâ albâ a basi rostri ad oculos: secundariis albo apicatis: corpore subtùs albo: rostro et pedibus nigris.

*Ad. ptil. hiem.* præcedenti similis, sed capitis lateribus, gulâ et gutture albis.

*Adult Male in summer* (Greenland). Upper parts of the body and wings glossy black; sides of the head and the throat brownish black; a white line passes from the ridge of the upper mandible on each side to the eye; short secondaries tipped with white, forming a narrow band across the wing; underparts white; bill and legs black; a curved vertical white line on each side of the bill; iris bluish black. Total length about 18 inches, gape 2·0, wing 8·1, tail 3·4, tarsus 1·35.

*Adult Female.* Resembles the male.

*Adult in winter.* Differs from the adult in summer dress in having the throat white instead of brownish

black, the white of the underparts extending to the bill and on the sides of the head and neck nearly to the nape; upper parts duller and browner than in the summer dress.

*Young* (Orkney, January). Resembles the adult in winter; but the bill is shorter, weaker, and much less elevated; legs brownish black. Gape 1·9 inch, height of bill at base 0·52.

*Young in down* (Lundy Island). Crown and neck covered with short white down, through which black shows in patches; rest of the upper parts covered with black down intermixed with silvery grey, the lower parts of the back tinged with brown; throat and flanks silvery grey; rest of the underparts white; bill small, but comparatively stout, measuring—gape 1·0 inch, height of bill at base 0·4.

THE Razorbill or Auk inhabits the northern portions of Europe and of Eastern North America; and though not found on the Pacific coasts of the latter continent, it is stated to occur abundantly on the coasts of Japan.

In Great Britain it is found at all seasons of the year; and large numbers breed at the various breeding-stations on our coasts, from the extreme north of Scotland down to the south of England. In some parts it is as numerous as the Puffin and Guillemot, but in others much less so. Dr. Saxby writes that formerly it used to be quite as plentiful as the Guillemot in Shetland, but has been steadily decreasing, there being apparently no cause for this diminution in its numbers; and Mr. Cordeaux also writes (B. of Humber Distr. p. 188) that it is not nearly so numerous at Flamborough as the Puffin and Guillemot, and arrives there rather earlier than the latter species to take possession of its breeding-quarters. In Ireland as in England it is common and resident, and breeds in suitable localities in many parts of the coast. It is not rare either in North or South Greenland, but has not hitherto been observed on the east coast; and in Iceland it breeds commonly in company with the Guillemot, many leaving in the winter, but some few remaining there throughout the year. In the Færoes, where it arrives late in January and leaves in July or August, it is, Captain Feilden says, "abundant, but far less numerous than the Guillemot. Svabo writes that the Razorbill has two hatching-spots between the legs, that it arrives and departs with the Guillemots, which it greatly resembles in its habits—though there are some exceptions; for the Razorbills sometimes breed in holes and crevices, like the Puffin, which the Guillemot never does."

Mr. Collett informs me that in Norway it is found chiefly in the northern districts, and in the breeding-colonies of sea-fowl within the Arctic circle the Razorbill is found in vast numbers. In those southward to the islands outside Stat it is met with in larger or smaller numbers, very sparingly outside Stavanger, and even down to the Sösteröerne at the entrance to the Christiania fiord. In the autumn and winter it visits in large numbers the southern coasts, and penetrates into the fiords. Nilsson says that it occurs on the Baltic coasts of Sweden, where it breeds, as for instance, on the Carlsöar, at Gottland. On the coast of Finland it has been met with right up to the top of the Gulf of Bothnia. Dr. Palmén says that eggs have been received from Ijä. Alcenius states that it occurs off Jakobstad and far out off Wasa only in certain places, as, for instance, on the Walsöar and on Petsgrundet, between there and Börkö, where Alcenius found eleven nests in 1873. It occurs off Björneborg but rarely, though it is common on Åland, whence baskets full of eggs are sent to Helsingfors. In Nyland it is rare, but breeds there, as,

for instance, on Jussarö and about Söderskär. Borggreve states that it is an irregular winter visitant to the German coasts of the North Sea, occurring much more rarely in the Baltic, and scarcely ever in the interior. Boeck obtained it in Prussia; and it has once been obtained in Mecklenburg on fresh water. According to Borggreve it breeds on Bornholm and Hesselö, and is very common on the coasts of Denmark in winter. It breeds in some numbers on the cliffs of Heligoland, and is tolerably common off the coasts of Holland and Belgium during the winter; and on those of France it is abundant at that season. Numbers breed along the precipitous north and west coasts, the Aiguilles d'Etretat being a well-known locality for this species and for the Guillemot. In the neighbourhood of Marseilles and on the "étangs" it is in some years quite abundant during the winter; and MM. Jaubert and Barthélemy-Lapommeraye speak with unwonted enthusiasm of the magnificent "chasse" they have enjoyed in bygone days, the "bag" sometimes consisting of *half a dozen* Razorbills in the course of a morning. Mr. Howard Saunders states that it is rarer than the Guillemot on the coasts of Spain; and Colonel Irby writes (Orn. Str. Gibr. p. 218) as follows:—"The Razorbill, in some winters, appears in the Straits in very large numbers, as in the winter of 1871-72, when, during February, they were to be seen in all directions about Gibraltar Bay, some coming into the New Mole so close to the land that we threw stones at them. They lingered on very late, as I saw ten on the 19th, one on the 21st, and two on the 28th of March, and one on the 7th of April. In this case their appearance was, no doubt, attributable in the first instance to heavy gales and storms outside the Straits." It occurs in winter along the coasts of Italy, becoming less frequent towards the south, until on the shores of Sicily it is only known as a rare visitant during severe weather. Count Salvadori says that there are three specimens in the Cagliari Museum, but that it is of rare occurrence in Sardinia.

Mr. C. A. Wright includes it in his list of birds occurring in Malta, and writes (Ibis, 1874, p. 230) as follows:—"I have lately had an opportunity of examining the specimen, taken many years ago, which gave rise to the admittance of the species *Uria troile* into the Malta list. It turns out to be a young Razorbill, *Alca torda*, which name should be substituted for the erroneous one (Ibis, 1864, p. 152)." I do not find it recorded from Greece or the eastern shores of the Mediterranean; nor does it occur in North-east Africa; but, according to Loche, it is met with accidentally in Algeria, after stormy weather, in winter, and very rarely in summer; and Favier states (*fide* Irby, *l. c.*) that it occurs near Tangier from November to February.

In Asia it does not appear to occur on the Arctic coasts; but, according to Temminck and Schlegel (who remark that Pallas, Steller, Pennant, and Krusenstern met with it numerous in the North Pacific), it is found on the coasts of Japan, and they received thence a specimen in moult. Dr. Coues, however, states that it is only rare or of accidental occurrence in the North Pacific; but on the Atlantic coasts of America it is common, and breeds in great numbers on the islands in the Gulf of St. Lawrence and on the coasts of Labrador and Newfoundland, and in winter strays south to New Jersey.

On land the Razorbill walks with difficulty, and with a hobbling motion; indeed it appears only to settle on the rocks where its breeding-stations are, and seldom or never on the level shore; but on the water it is evidently quite at home, and swims and dives with the greatest ease. Its flight is direct and rapid, the bird propelling itself by rapid beats of the wing, often

turning a little on its side, so as sometimes to present the back and sometimes the breast to the spectator, and when alighting it always settles abruptly. Its food consists chiefly of crustacea and small fishes, which it procures by diving; and, like the Guillemot, it moves about with facility under water, using the wings as if in the air, and remaining below a considerable time, rising at some distance from where it disappeared below the surface. When swimming, the body is held horizontal, the neck rather drawn in, and as it proceeds it frequently immerses the head and peers below the surface. When it dives it disappears like a flash, plunging under with considerable force.

The present species breeds in large numbers amongst the Gulls and Guillemots in the vast breeding-places which are found here and there in suitable localities on the coast. The places selected are high rugged cliffs overhanging the sea, on the ledges of which the sea-birds can find tolerably secure spots to deposit their eggs. The Razorbills usually select the ledges about half-way up the cliff, above those taken possession of by the Guillemots and Gulls; and often fifty or more of them crowd closely together. A single egg is deposited by each female, no nest being made, the egg being placed on the bare rock without any protection; and when suddenly disturbed, one or two eggs are not unfrequently knocked over the edge of the cliff-ledge into the sea as the birds take wing. I have visited several breeding-places where the present species, the Puffin, Kittiwake, and Guillemot were breeding in such vast numbers that when disturbed, and all on the wing, they formed a vast cloud in the air, flying so close as almost to impede each other's movements, the noise and confusion reminding one of a vast city. On the ledges the Razorbills sit erect, showing their white breasts, and ranged as regularly as a file of soldiers. The eggs are usually deposited early in May; and incubation lasts about a month. When hatched the young birds remain on the ledges until fully fledged, when they accompany their parents to the sea and are taught to forage for themselves. The egg of the Razorbill is large for the size of the bird, pyriform in shape, rather elongated, measuring from  $2\frac{3}{4}$  by  $1\frac{3}{4}$  to  $3\frac{1}{4}$  by 2 inches, and vary considerably in markings, some being, comparatively speaking, sparingly, whereas others are closely blotched and spotted. In those in my collection, from the British and Finnish coasts, the ground-colour varies from white to pale stone-buff or buffy white, one having a faint greenish tinge; the underlying shell-markings are purplish grey, and the surface-spots and blotches are brownish black or black, most being more profusely marked at the larger end.

In the north of England and in Scotland the Razorbill appears to have diminished considerably in numbers during the last few years; and this species has, it would seem, been more liable than most of its allies to the mortality which has taken place amongst the sea-fowl. Referring to this, Mr. Robert Gray writes (B. of W. of Scotl. p. 438) as follows:—"The Razorbill is a much less common species than the Puffin or the Guillemot at all the breeding-stations in the west of Scotland. Barra Head and Ailsa Craig may be regarded as its chief haunts, though it is found in limited numbers at the Mull of Oe, in Islay, and other places of minor extent, both in the outer Hebrides and on the western mainland. I may here refer to a very extraordinary mortality which occurred among the sea-fowl of the Firth of Clyde in September 1859, and which at the time attracted considerable attention from local naturalists. The principal victims to this epidemic, if such it may be called, were the Puffin, Guillemot, Razorbill,

and common Gull (*Larus canus*). The Razorbill perished in extraordinary numbers, being found in the proportion of ten to one of the other species. From information communicated to the Natural-History Society of Glasgow by one or two of the members, it would appear that the mortality had set in about the time of the birds leaving Ailsa Craig and the breeding-places off the coast of Ireland, and that during the few intervening weeks they had probably, from a diminution or entire absence of their usual food, fallen into a low condition favourable to the development of the disease to which they ultimately succumbed. They were all found much farther up the Firth than usual, as if in search of food, many birds being obtained even at Renfrew and other places, in waters at a distance from the sea. In these situations they darted eagerly at any food which came in their way, rushing at baited hooks on a hand-line, and otherwise exhibiting a tameness more like the result of starvation than actual disease. They were all in a wasted condition, being reduced almost to skin and feathers, and were found dead or dying in thousands over a wide extent of sea, from the mouth of the river Clyde to the Irish coasts, the master of one of the mail steam-packets having reported that he sailed his ship through miles of floating carcasses. At a meeting of the same Society, held on 29th November following, my friend Mr. David Robertson read a report on this mortality, in which he gave an apparently satisfactory explanation of the mystery. In this communication it was shown that nothing unusual was observed among the birds until a few days after the storms in the early part of the month of September; and that they were then in a state bordering upon starvation may be proved from the fact of so many hundreds, even thousands, resorting to estuaries, heedless of danger and contrary to their usual shyness. The testimony of the fishermen at various places showed that the common dog-fish was unusually abundant, while the small herring-fry and other fishes constituting the food of sea-birds had entirely disappeared."

The specimens figured are an adult male, in full summer dress, and a young bird in its first winter plumage, both being those above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

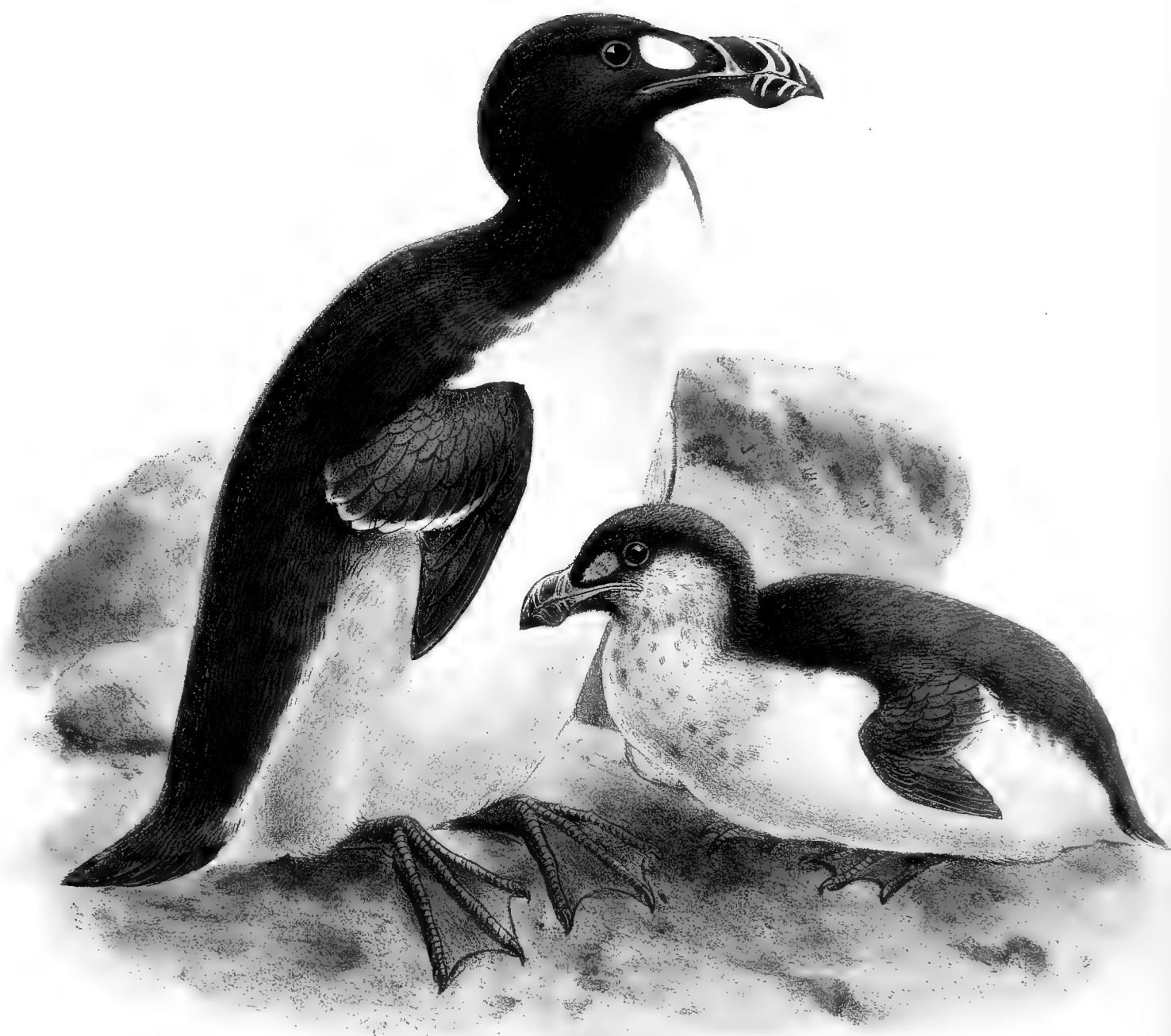
*a, b, c, d, e, ad.* in summer dress. Greenland (*Ericksen*). *f, ♂*. Orkney, May (*Dunn*). *g, pull.* Lundy Island, July 1871 (*H. Saunders*).

*E Mus. E. Hargitt.*

*a, ♀*. Orkney, January 25th, 1869 (*E. H.*). *b, ♂*. Havre, February 3rd, 1875. *c, d, ♀*. Havre, March 4th, 1875 (*Pluche*).







H. J. Keulemans lith.

H. J. Keulemans imp

GREAT AUK.  
*ALCA IMPENNIS*

## ALCA IMPENNIS.

(GARE-FOWL, OR GREAT AUK.)

*Alca major*, Briss. Orn. vi. p. 85, pl. vii. (1760).*Alca impennis*, Linn. Syst. Nat. i. p. 210 (1766).*Le Grand Pingouin*, Buff. Hist. Nat. Ois. ix. p. 393, pl. xxix. (1783).*Pinguinus impennis* (L.), Bonnat. Tabl. Encycl. i. p. 28 (1790).*Alca borealis*, Forster, Synopt. Cat. Brit. B. p. 29 (1817).*Plautus impennis* (L.), Steenstrup, Naturh. Foren. Vidensk. Meddel. 1855, p. 114.*Chenalopex impennis* (L.), G. R. Gray, Hand-l. of B. iii. p. 95. no. 10773 (1871).

*Gearbhul*, Gaelic; *Grand Pingouin*, French; *Brillenalk*, *flügloser Alk*, German; *Geirfugl*, Danish; *Gorfuglur*, Færoese; *Geirfugl*, Icelandic; *Anglemager* [?], *Geirfugl*, Norwegian; *Garfogel*, Swedish; *Isarokitsok*, Greenlandic.

*Figuræ notabiles.*

Edwards, Nat. Hist. B. iii. pl. 147; D'Aubenton, Pl. Enl. 367; Donovan, Brit. Birds, pl. 243 (winter plumage); Hunt, Br. Orn. iii. pl. to face p. 8; Werner, Atlas, *Palmipèdes*, pl. 74; Kjærb. Orn. Dan. taf. 53, Suppl. taf. 35; Naumann, Vög. Deutschl. taf. 337; Sundevall, Svensk. Fogl. pl. lxxx. fig. 2; Gould, B. of Eur. pl. 400; id. B. of G. Brit. v. pl. 46; Audub. B. of Am. pl. 341.

*Ad.* capite, collo et corpore suprâ, cum alis et caudâ, nigris, remigibus secundariis albo terminatis: ante ventrem plagâ magnâ ovali albâ: pectore et corpore subtus albis: rostro et pedibus nigris.

*Adult in summer.* Head, hind neck, throat, and entire upper parts, with the wings and tail, black; secondary feathers tipped with white, and between the beak and the eye there is also a large oval patch of white; breast and underparts generally pure white; beak and legs black, the former very strong and with several vertical furrows on the lower mandible; iris deep brown. Total length about 30 inches, beak 3·6, wing 6·0, tail 2·0, tarsus 2·1.

*Adult in winter.* Figured by Donovan (*ut suprâ*) from specimen formerly in the Leverian Museum, as having the chin, throat, and front of the neck white instead of black.

*Young* (only in Newcastle Museum). Like the adult, but having only two or three furrows on the mandible, instead of from six to ten.

*Obs.* I do not believe that there is any concise description on record of the young bird in down; all I can find relating to the subject is the note by O. Fabricius, who says (Faun. Grœnl. p. 82) that he saw a young bird, captured in August, which was covered with grey down: "pullum vidi, mense Augusto captum, lanuginem griseam tantum habentem."

It is with some doubt that I include the Gare-fowl in the present work; for although it has at one time been by no means a very rare bird in the extreme north-western portion of the Western

Palæarctic Region, there can scarcely be any doubt that it is now altogether extinct. To write a complete history of this remarkable flightless bird would entail a considerable amount of research into old works, and would take up more space than I should be justified in using for the history of an extinct species; I propose therefore to give but a brief account, and may refer my readers to the articles by Professor Newton in 'The Ibis' (1861, p. 374, and 1870, p. 256), the 'Natural-History Review' (1865, p. 467), and in the last edition of the 'Encyclopædia Britannica' ("Birds," vol. iii. pp. 734, 735, and "Gare-fowl," vol. x. pp. 78-80) for further details. The late Mr. Wolley began the collection of facts relating to the Gare-fowl with the view of writing its history, and to that end made a voyage to Iceland to gather from the mouths of those who had seen the last of it all they could tell him about it. At his death the materials he had collected passed into the possession of Professor Newton, who, in the articles above cited, has recounted the general results thus obtained, and, it may be hoped, will one day publish all the details which he, in conjunction with the late Mr. Rowley (whose interest in the history of this as of other extinct species of birds was very great), has since accumulated.

It has generally been supposed that the Gare-fowl or Great Auk was essentially an arctic species; but this is a popular error; for, as Professor Newton points out, but one capture has been reported from within the arctic circle, and it is doubtful whether the specimen in question, now in the Copenhagen Museum, was really obtained at Disco or at Fiskenes, much further to the southward and without the arctic circle. The story first published by Professor Steenstrup (Vid. Meddel. 1855, p. 95, note) that early in April 1848 one was shot on Vardö, in East Finmark, has also been shown by Professor Newton to be unreliable.

The true home of the present species appears to have been St. Kilda, the Orkney, and Färö Islands, and some three or four isolated rocks off Iceland on this side, and the Newfoundland seas on the other side of the Atlantic, its occurrence elsewhere being merely accidental. The last obtained in Orkney was killed in 1812, and sent to Mr. Bullock, at the sale of whose collection it was bought for the British Museum, where it now is—a fine specimen in summer plumage. The last known at St. Kilda was caught alive in 1821 or 1822, but subsequently made its escape, as stated by Fleming (Edinb. Phil. Journ. x. pp. 96, 97), who saw it while in captivity. In 1834 Dr. Burkitt received from Mr. Francis Davis, of Waterford, an example which had been taken alive, some time before, at the mouth of that harbour, as recorded by Mr. J. H. Gurney, jun. (Zool. s. s. p. 1449), who has corrected several errors in the former accounts of this singular event. The specimen, which died while moulting, was given by Dr. Burkitt to the Museum of Trinity College, Dublin, and is now to be seen there. These three are the only instances of the occurrence of the species in the British Islands within recent times that are at all trustworthy; for though there are other records of the bird having been seen or obtained, but not preserved, they are naturally open to doubt.

In Greenland the Great Auk has not been obtained since 1815, in which year the example above mentioned was shot at Fiskenes; for though one is said to have been killed and eaten between Fortuna Bay and Engleman's Harbour in September 1859 or 1860, Mr. Collin (Skand. Fugl. p. 749) states that the result of further investigation on the spot shows that some mistake must have been made.

Faber (Prodr. Isl. Orn. p. 48) says that it used formerly to breed on two isolated rocks in

the sea south of Iceland, especially on one four (=thirty English) miles from the land off the outermost south-western point of Reykjanes, whither the natives used annually, for more than a hundred years, to make expeditions to capture the birds, taking large numbers of them and their eggs. In 1813, men in a vessel from the Færoes landed there and obtained many, of which twenty-four were taken to Rejkjavik. Faber when at Lautrabjerg was told by a peasant that he killed seven on a rock in 1814; and a peasant on the Westman Islands informed him that in or about the year 1800 he obtained a Great Auk with its egg at a breeding-place there. A few years after 1820, when Faber had in vain sought for this bird, two were killed on a rock at Oerebakke, and sent to the Copenhagen Museum by Count Moltke. Another was sent in 1828 from Rejkjavik; and again in October 1830 a skin and an egg were sent to the museum by Count Moltke, who wrote saying that a volcanic eruption had destroyed the island where the Gare-fowls bred, and that a pair which had taken up their quarters on an island (Eldey) nearer the land had been killed, one of these being the one he sent, but that he could not trace the other. Between that year (1830) and 1844, as appears by Wolley's researches, not fewer than sixty birds were killed on this island, and perhaps a good many more. A large portion of them went to the Museum at Copenhagen, and others to Mr. Brandt, of Hamburg, and thus were distributed to the various museums of Europe. The two last examples known to have been obtained on Eldey were killed in 1844, and, having been skinned in Iceland, were sent with their bodies in spirit to Professor Eschricht at Copenhagen.

In the Færoes it most certainly has not been met with for many years. Captain H. W. Feilden, who in his notes on the birds of those islands (Zool. s. s. p. 3280), gives very full details of the various records of this bird as far as they are concerned, says that he spoke to an old man, Jan Hansen, then eighty-one years of age, believed to be the last man who remembers seeing a Gare-fowl in Færoe, who told him that one was caught on the 1st July 1808.

It has been recorded from the coasts of Norway by several authors; but, according to Professor Newton and Mr. Collett, the stories of its presence there break down on investigation. The only reported instance of its occurrence in Sweden is that by Ædmann, at the end of the last century, to Pennant, of one said to have been killed off Marstrand. Another is said by Benicken to have been shot in Kiel harbour in the year 1790.

According to Degland (Orn. Eur. ii. p. 529) three examples were killed about 1800 or 1810 off the coast of Cherbourg; but both here and in another place he misquotes the evidence of Hardy (Annuaire Normand, 1841, p. 298), and the whole statement is open to doubt.

In the Newfoundland seas and the Gulf of St. Lawrence the Gare-fowl used formerly to be abundant; and Professor Newton says, "The fact is incontestable that its breeding-stations in the western part of the Atlantic were for three centuries regularly visited and devastated with the combined object of furnishing food or bait to the fishermen." Mr. John Milne in 1874 visited Funk Island, one of the former resorts of the Gare-fowl in the Newfoundland seas, and published in the 'Field' newspaper (27th March, 3rd and 10th April 1875) an account of his visit, which was richly rewarded, for he brought away with him remains belonging to no fewer than fifty birds.

According to a list published by Professor Newton, corrected up to 1871, there appear to be about seventy-one skins, nine complete skeletons, and sixty-five eggs of this bird known to

exist in collections; the majority of which there is every reason to believe were brought from Iceland, having been killed there between 1831 and 1844.

But little is known concerning the habits of this bird. Owing to its total inability to fly, it was never observed out of the water, except at its breeding-stations; and when met with on land it could generally be caught without much difficulty. O. Fabricius (*Fauna Grœnlandica*, p. 82) says that it fed on *Cottus scorpius*, *Cyclopterus lumpus*, and other fishes of the same size, and the stomach of a young bird in down captured in August contained rose-root (*Rhodiola rosea*) and littoral vegetable matter, but no fishes.

There appears to be but little doubt that the extinction of this species has been chiefly, if not entirely, brought about by human agency. Wolley clearly shows that the latest survivors in Iceland, after being driven nearer inland by the disappearance of their chief breeding-station, were killed by expeditions organized solely for the purpose of obtaining skins and eggs; and, as above stated, the breeding-places on the western side of the Atlantic were regularly and most ruthlessly devastated by man until the bird disappeared.

Like the Razorbill the Great Auk deposited a single egg on the bare ground, almost always on a craggy surf-washed rock far out at sea. In general coloration it closely resembles the egg of the Razorbill, but is much larger in size, measuring about  $4\frac{3}{4}$  by  $2\frac{2}{4}$  inches.

The specimens figured are the adult bird in full summer dress in the British Museum, and the moulting bird in the Dublin Museum, the latter being from a painting by Mr. E. Neale, who visited Dublin expressly for that purpose. I am not so fortunate as to possess an example of this rare bird; and the specimens I have had an opportunity of personally examining are those in the British, Cambridge, Newcastle\*, Brussels, Brunswick, Washington, Philadelphia, Berlin, Leyden, Paris, and Strasburg Museums, and in the collections of the late Mr. G. Dawson Rowley, Baron de Selys-Longchamps, Mr. Arthur Crichton, and Mr. J. Hancock.

\* This is the only young specimen that seems to exist. It was probably sent by Fabricius to Tunstall. See Latham (*Synops.* iii. p. 312) and Fox (*Cat. Newc. Mus.* p. 92).





M & N Hanhart imp

COMMON GUILLEMOT.  
ALCA TROILE.

JG Keulemans lith

## ALCA TROILE.

(COMMON GUILLEMOT.)

- Uria lomvia*, Brünn. Orn. Bor. p. 27 (1764).  
*Uria ringvia*, Brünn. ut suprâ (1764).  
*Uria alga*, Brünn. op. cit. p. 28 (1764).  
*Uria*, Briss. Orn. vi. p. 70, pl. 6. fig. 1 (1760).  
*Colymbus troile*, Linn. Syst. Nat. i. p. 220 (1766).  
*Uria lomvia*, Scop. Ann. I. Hist. Nat. p. 78. no. 103 (1769).  
*Colymbus minor*, Gmel. Syst. Nat. i. p. 585 (1788).  
*Uria troile* (L.), Lath. Ind. Orn. ii. p. 796 (1790).  
*Uria troile leucophthalmos*, Fab. Prodr. Isl. Orn. p. 42 (1822).  
*Uria lacrimans*, Lapyt. in Choris, Voy. Pitt. autour du Monde, p. 23 (1822).  
*Uria leucophthalmos*, Fab. Isis, 1824, p. 146.  
*Uria minor* (Gm.), Steph. in Shaw's Gen. Zool. xii. p. 246 (1824).  
*Uria leucopsis*, C. L. Brehm, Vög. Deutschl. p. 982 (1831).  
*Uria norvegica*, C. L. Brehm, Vög. Deutschl. p. 983 (1831).  
*Uria (Lomvia) ringvia*, Brandt, Bull. Acad. St.-Pétersb. ii. p. 345 (1837).  
*Uria (Lomvia) troile*, Brandt, ut suprâ (1837).  
*Uria hringvia*, Keys. & Blas. Wirbelth. Eur. p. 93 (1840).  
*Uria intermedia*, Nilss. Skand. Faun. ii. p. 549 (1858).  
*Catarractes troille* (L.), Bryant, Mon. Gen. Catarr. in Proc. Bost. Soc. N. H. 1861, p. 6. fig. 2 a.  
*Catarractes ringvia*, Bryant, Mon. Gen. Catarr. in Proc. Bost. Soc. N. H. 1861, p. 8, fig. 2.  
*Alca lomvia* (Scop.), Schlegel, Mus. Pays-Bas, Urinatores, p. 15 (1867).  
*Lomvia troile* (L.), Coues, Proc. Acad. Nat. Sc. Phil. 1868, p. 75.  
*Lomvia ringvia* (Brünn.), Coues, tom. cit. p. 78.
- Gearadh-breac*, *Langaidh*, Gaelic; *Guillemot troile*, French; *Lumme*, *Schmalschnabel-Lumme*, German; *Zeekoet*, Dutch; *Langnæbet Teiste*, Danish; *Lomvia*, Færoese; *Langnefia*, *Langvia*, Icelandic; *Lomvia*, *Spidnæbbet Alke*, Norwegian; *Sillgrisla*, *Silldopping*, Swedish.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 903; Kjærb. Orn. Dan. taf. 52 & 53, and Suppl. taf. 35; Naumann, Vög. Deutschl. taf. 331, 332; Sundevall, Svensk. Fogl. pl. 52. fig. 4; Gould, B. of Eur. pls. 396, 397; id. B. of G. Brit. v. pl. 48; Schlegel, Vog. Nederl. pls. 263, 264; Audub. B. of Am. pl. 473.

*Ad. ptil. æst.* capite et collo saturatè fuscis: corpore suprâ fusco vix schistaceo tincto: alis et caudâ nigro-

fuscis, remigibus secundariis albo apicatis : pectore et corpore subtùs albis, hypochondriis fusco striatis : pedibus et rostro nigricantibus : iride fuscâ.

*Ad. ptil. hiem.* mento, gulâ et capitis lateribus albis nec fuscis, his lateraliter fusco guttatis : striâ fuscâ per capitis latera, pone oculos : corpore et capite suprâ saturationibus.

*Juv. ptil. hiem.* adulto similis, sed rostro graciliore et pallidior, pedibus flavido tinctis.

*Pull.* capite et corpore suprâ sordidè fuscis, pileo et nuchâ albo striatis : subtùs albus, mento et gulâ sordidè griseo notatis.

*Adult in summer* (Flamborough). Head and neck all round dark brown ; upper parts of the body dark brown with a slaty tinge ; wings and tail dark brown, the secondaries tipped with white ; underparts from the throat white, the flanks streaked with dusky brown ; under wing-coverts white, slightly variegated with dusky grey ; bill black ; the legs blackish olivaceous, the webs rather more olivaceous ; iris brown. Total length about 16·5 to 17 inches, gape 2·9, wing 7·7, tail 2·05, tarsus 1·5.

*Adult in winter* (Leadenhall market, 9th November). Differs from the adult in summer dress in having the throat and sides of the head white on the edges, where it joins the dark-brown coloration, and on the lower throat mottled with brown ; a dark streak passes from behind the eye through the white on the side of the head ; the brown on the upper parts darker than in the summer dress.

*Young in winter* (Leadenhall Market, November). Resembles the adult, but has the bill more slender and lighter in colour ; feet tinged anteriorly with yellowish.

*Young in down* (Lundy Island, July 1872). Covered with short, close down ; upper parts dusky brown, the head and hind neck streaked with white ; underparts white, the chin and throat marked with dusky grey.

*Obs.* The ringed variety only differs from the adult in summer plumage in having a narrow ring round the eye and a streak passing along the side of the head from the eye white.

THE Common or Foolish Guillemot inhabits the northern portions of Europe and the Atlantic coasts of North America, ranging further south in winter. It does not, however, go as far north as Brûnnich's Guillemot, which replaces it in higher latitudes.

In Great Britain it is common and resident all round the coast ; but, except during the breeding-season, it usually keeps out at sea, and is less frequently observed. It breeds in suitable localities, usually in high cliffs overhanging the sea, all round the coast from the Isle of Wight up to the extreme north of Scotland. Mr. Robert Gray says (B. of W. of Scotl. p. 420) that it is "the most abundant of the Alcidae to be found on the west of Scotland. Immense numbers of Guillemots frequent the coasts of the mainland as well as the inner and outer group of islands ; and wherever suitable cliffs occur they take up their quarters during summer, forming colonies numbering, in some particular places, two or three hundred thousand birds. In the vicinity of these breeding-haunts they literally blacken the surface of the sea, creating a sight interesting alike to the bird-student and ordinary tourist."

It is not uncommon off the coast of Ireland ; and some remain throughout the year. There are breeding-colonies, in suitable localities, in the cliffs overhanging the sea in many parts of the

island. In Greenland it is almost entirely replaced by Brünnich's Guillemot, and is therefore very rare. Two specimens were sent by Holböll from Godthaab, where it breeds, and perhaps also in other parts of the coast.

In Iceland it breeds in many portions of the coast, and in some places in countless thousands. According to Faber many remain over the winter. The Bridled Guillemot is found there in about the same proportion as elsewhere; but a most curious variety, having the bill and feet yellow, is said to occur now and then on Grimsey.

Captain Feilden, in his notes on the ornithology of the Færoes, says that, next to the Puffin, it is "the most abundant of the rock-birds, and supplies a large proportion of the food to the islanders. On the magnificent cliffs of the islands of Skuœ and Great Domin, it congregates during the breeding-season in countless multitudes; and when sailing underneath these nurseries, the noise made by the wings of the continuous ascending and descending flights of the Guillemots and Puffins is like that of the wind rushing through a number of telegraph wires during a gale. Landt mentions that the number of the winged tribes swarming between Great Domin and Skuœ in the summer is incredible, that they almost darken the air and stun the ears with their piercing cries, and that two people in the same boat cannot hear each other speak. This is either an exaggeration, or else the rock-birds must have decreased since Landt's time. Still it is a wondrous sight, passing along the base of these cliffs during the breeding-season; for the water is then covered with Guillemots, Puffins, and Razorbills, that are so tame and regardless of man that they just dive to avoid the stroke of the oars, and come up again a few yards from the boat; whilst, at a distance of a couple of miles from the Fugleberg, where the limit of protection ceases, these same birds are exceedingly wary, and hardly allow a boat to approach them within gunshot without diving. The breeding-places of the Guillemot and other rock-birds throughout Færoe are protected from the 1st of March to the 15th of August, during which time no gun may be fired within a distance of two English miles direct to sea, and one mile on each side of Fugelberg. The breeding-places of the Shag are protected all the year round, whilst on Mygenaes, where the Gannet breeds, the date is from the 25th of January to the 25th of October. No gun may be fired within one mile (English) of an Eider-Duck breeding-establishment: the punishment for the first infraction of the law is a fine of from one to ten rixdollars; and a subsequent conviction entails loss of gun and sporting implements, and a further fine. The various methods of fowling employed by the islanders are minutely described by Debes and Landt, and more recently by Müller (*Færœernes Fuglefauna*). The rules for the division of the birds, on the conclusion of a day's fowling, are of very ancient date, and extremely complicated to a stranger, whilst they vary in different islands."

The Guillemot breeds also, Mr. Collett informs me, in vast numbers in the more boreal portions of Norway; but, as is the case with the Puffin, the breeding colonies are smaller south of the arctic circle. Still it breeds on Ristö and several other islands off Stat, and sparingly down to the Sösteröer, near the Swedish frontier. In the autumn and winter large numbers are found round the whole coast, and it penetrates in flocks up the southern fiords. It is somewhat remarkable that, according to Pastor Sommerfelt (*Öfv. K. Vet. Ak. Förh.* 1861, p. 88), the ringed variety is much more numerous than the ordinary form, or Brünnich's Guillemot, in the Varanger fiord; and in the winter of 1857-58 vast numbers of this form appeared there. Mr. Collett, on

the other hand, expressly states (Orn. N. Norw. p. 118) that all he examined at the Stappen breeding-place, near the North Cape, belonged to the common form.

Nilsson says that it is occasionally seen in the spring at Kullen, in Skåne; but it does not appear to penetrate up the Baltic, or to occur on the Baltic coasts of Finland; but Palmén states (Finl. Fogl. ii. p. 670) that, according to Lilljeborg, it is not uncommon at Schuretskaja, and Mr. M. Brenner met with it at Keljättni on the 11th July 1863. In Denmark, Mr. Collin states (Skand. Fugl. p. 734), it is very common on the coast in the winter, but breeds only on Bornholm, in the so-called "Muleklöv," and on the cliffs towards the sea at Hammeren. It is also stated to breed on Christiansö and on Heligoland. During the winter season it is found here and there in the German Ocean; and Professor Schlegel says that it is met with on the Dutch coast from September to April. On the coast of Belgium it is abundant in winter; and occasionally stragglers are found on the rivers and marshes of the interior. In France it breeds in suitable localities on the northern and western coasts, but on the Mediterranean coasts it is of rare occurrence; and MM. Jaubert and Barthélemy-Lapommeraye only cite one instance, viz. of five specimens, which were captured on the Étang de Berre on the 25th February 1853, one of these being a Ringed Guillemot. It occurs on the coast of Portugal, and is, according to Professor Barboza du Bocage, common at Peniche, Cazimbra, &c. Southward of this it becomes rarer, but it straggles down to the coasts of North-west Africa. Colonel Irby says that it is occasionally seen in small numbers about the Straits of Gibraltar in winter, especially after severe weather from the westward; but in the Mediterranean it is of very rare occurrence. Mr. Howard Saunders says that he only knows of three instances of its having been obtained there; and Mr. C. A. Wright, who included it in his list of the birds of Malta and Gozo, subsequently ascertained that the specimen obtained was not a Guillemot, but the young of the Razorbill. How far it ranges down the African coast I am unable to say, but probably not far. Dr. Carl Bolle states, on the authority of Berthelot, that it occurs off the Canaries; but I do not find this confirmed by later observers who have visited those islands. Nor can I give the eastern limit of its range in the north of Europe; but it probably does not range far east of the north-east coast of Lapland, and in Novaya Zemlya and Spitzbergen it is replaced by *Alca bruennichi*. On the American coast it is common on the east side of the continent down to the southern coast of New England. Dr. E. Coues says that it is found to or beyond 80° N. lat., and breeds from Nova Scotia northward, ranging in winter to the extreme southern coast of New England. It does not appear to occur on the Pacific coast, being there replaced by *Alca californica* (Bryant).

The curious variety of the present species, usually known by the name of the Ringed or Bridled Guillemot, is very much less numerous than the common race. As a rule about one in ten, or one in about fifteen, belongs to this form; but in some breeding-colonies it is more, and in others less numerous. As above stated, Pastor Sommerfelt speaks of the large proportion of the Ringed form in the north of Norway; but this is denied by Mr. Collett, who more recently visited the breeding-colonies at the North Cape. Mr. J. A. Harvie states that the Ringed variety is abundant on Handa as compared with other bird-stations on the Scotch coast, and that he calculated that every tenth or twelfth bird belonged to this variety. This agrees with what Mr. Wolley remarks respecting the same breeding-station, viz. that "in every row of ten or twenty Guillemots one or two were seen to have the white above the eye." It may

safely be stated that, in every colony where the Guillemot breeds, a small proportion of the birds belong to this form; and all evidence tends to prove that the two forms interbreed indiscriminately, and that there is most certainly no specific difference between them. Captain Feilden, who took great interest in working out this question, writes, in his *Notes on the Ornithology of the Færoe Islands*, as follows:—"Having paid considerable attention to these two forms both in Great Britain and Færoe, I am inclined to look upon them as one and the same species. The two varieties are to be found breeding together indiscriminately; and the eggs of the Ringed Guillemot are as liable to difference of coloration as those of the common Guillemot. For an account of a series of observations made in the Outer Hebrides during the spring of 1870 by my friend Mr. Harvie-Brown and myself, in reference to this subject, see Gray's '*Birds of the West of Scotland*,' p. 426. We there came to the conclusion that in the Outer Hebrides the ringed variety are in the proportion of one to five; and I think that the same estimate would hold good in Færoe. An examination made by me on one occasion of a large number that had been killed by the fowlers on the island of Skuø gave nearly the same result. Wolley remarks that he found the Ringed Guillemot in Færoe in the proportion of, perhaps, one to ten, that it lays a similar egg to the common Guillemot, as he ascertained in several instances, and that it was of both sexes, and not, as the natives thought, of one sex, some of them saying it was the male, and some the female; and he came to the conclusion that he could not see any thing to lead him to suppose that there existed a specific difference between the two varieties."

Like the Razorbill, the Guillemot is a rock-breeder, and deposits its single egg on the bare rock, usually on a narrow shelf high above the water, without making any nest. I have visited several of the larger breeding-colonies at different times, but cannot do better than give the notes published by some of those observers who have lived amongst their breeding-haunts and have therefore had continual opportunities of watching these birds during the breeding-season. Mr. Cordeaux writes (*B. of Humb. Dist.* p. 183) that it "nests annually in immense numbers on the Speeton Cliffs, at Flamborough, as well as on the Farn Isles. During the winter months it may be found in every part of the North Sea, and occasionally within the Humber. Although not, as a rule, frequenting the neighbourhood of their breeding-haunts at this season, they are sometimes seen in considerable numbers on the Flamborough cliff in November, becoming quite common in January. They commence nesting in May, incubation lasting a month, the female sitting on a single egg placed on the bare rock, and incubating in an upright position. If the first egg is taken by the cliff-climbers, the old bird will lay another, and, I am told, if the plundering is repeated, will go on laying in succession as many as ten or twelve eggs.

"When the young are partly fledged, and even when they are quite little things, the old birds carry them down to the sea on their backs. This is done late in the evening, after sunset. The Flamborough boatmen say that when they are fishing under the Speeton Cliffs on summer evenings they have often observed this process of carrying the young down, the little fellow clinging to its parent's back, and not unfrequently tumbling from the somewhat precarious perch into the sea sooner than was intended.

"The Guillemites leave their breeding-stations about the middle of August; several, however, leave much earlier than this date. I have seen the old birds with their half-fledged young, yet unable to fly, off the Lincolnshire and Norfolk coasts, also in the middle of the North Sea

during the second and third weeks in July. By the end of August both old and young have entirely forsaken the cliffs, and gone out seaward; a stiff breeze from the E. or N.E. in this month is said to hasten the autumn migration, and to clear the rocks of their numerous tenants.

“During the nesting-season the Guillemot flies daily immense distances to and from its feeding-grounds, Flamborough birds going as far south as the Norfolk and Suffolk coasts, and northward to the Durham coast, halfway between the Tees and Tyne, where they are joined by the Farn-Island birds.”

Some interesting notes on the nidification of this bird are also given by Dr. Saxby, who writes (*B. of Shetl. Isl.* p. 290) as follows:—“Among the crowded ledges it is next to impossible to ascertain whether the Guillemot lays more than one egg in a season; but by experiments in small retired crevices where there are not more than half a dozen birds, I have satisfied myself that one only is laid, but that if this be removed within a few days another is deposited in its place. Such, however, does not happen when incubation has lasted sufficiently long for the reproductive organs to have nearly regained their normal condition; but I have never yet tried the effect of removing the second egg. In these outlying situations, also, I have time after time endeavoured to determine the number of days occupied by the process of incubation, but with a not very satisfactory result—calls in other directions, or unfavourable weather, or some equally unavoidable cause, having most provokingly occurred at the critical time. The few trustworthy egg-gatherers whom I have questioned have expressed their belief that exactly four weeks, or twenty-eight days, is the time; but this estimate seems to be rather under the truth; at any rate I once discovered a conspicuously marked egg, apparently newly laid, and examined it just thirty days afterwards, and on carefully lifting away a small portion of the shell found a living bird within. With regard to the young birds themselves ornithologists are still unable to decide how it is that, while some remain upon the rocks, others, not many days old, are to be seen swimming in the surrounding waters.

“Some of the people unhesitatingly assert that they have seen the parents take them upon their backs, and some that they are carried down to the water by the neck; but none of the men, whose word can be relied upon, would venture to commit themselves to such statements. Macgillivray, who was usually very careful in the collection of his evidence, quotes the words of one of his correspondents, who asserts that the Guillemots ‘convey their young to the water by seizing them by the skin of the back of the neck, as a cat does a kitten;’ but he overlooked the fact that his informant wrote from old tradition and had never witnessed the act himself. Mr. Gray, however, in his pleasing account of a visit to Ailsa Craig, states that the keeper, in whose veracity he seems to have confidence, had seen the parents carry them down on their backs, and also by the loose skin of the back of the neck. In the same account the author ingeniously suggests that, where such large numbers of eggs are crowded together, the great diversity of marks and colouring may enable each bird to distinguish its own; but it is necessary to remember that in a short time, especially in rainy weather, the eggs become so spoiled that to recognize any marks of difference requires close scrutiny; indeed the attempt is sometimes useless. The eggs, however dirty, need much care in the washing, especially when the colouring-matter is new. Those specimens which are purchased, and which, having a very clean appearance, present a patch of ground-colour within a large deeply coloured blotch, have most probably been overwashed, the

pigment remaining longest in a soft state where it is thickest. Sometimes the Guillemot sits flat upon the egg, oftener in a nearly upright position, and when unapprehensive of danger seems to have a fancy for turning with its back towards the sea. I am inclined to believe what others have already stated, that the egg is hatched between the legs; and I have sometimes wondered whether it is quite impossible that the young are carried down to the sea in that manner accidentally. If this could once be proved it would also satisfactorily clear up the other two difficulties, viz. how it happens that only a comparatively few of the young are seen in the water, and how it is that fowlers and others who spend whole days among them do not detect them in the act of removal. The Guillemot is more irregular in its hour of laying than any bird I know. At two o'clock in the afternoon I have seen a female shot containing a perfectly coloured egg. It has happened several times that similar cases, the hour excepted, have occurred at a distance of several miles from the nearest breeding-station. When a sudden alarm disturbs the colony, it is sad to see numbers of eggs either falling into the sea or breaking upon the rocks—a mishap so common as the bird hurries off the ledge, that it must cause a large annual deficiency in the numbers. The idea that the birds wilfully destroy their eggs rather than leave them to be taken by the fowler, is still prevalent in Shetland; but the people are unable to say what can be the reason for tumbling their eggs over the cliffs when a shot is fired from below. Another popular belief exists, but only among those who have never visited the haunts of sea-birds, that the eggs of Razorbills and Guillemots are fixed by means of a kind of glue, supplied by the birds. The owner of a remarkably fine collection of eggs questioning me upon this subject, was astonished at my ignorance in the matter; and although he would not contradict me, he strongly hinted at the advantages of more careful observations on the part of others."

The eggs of the Guillemot vary exceedingly in colour and markings, so much so that it is difficult to get any two eggs very closely resembling each other. The ground-colour varies from white to deep blue or greenish blue; and the markings, which are sometimes mere spots and at others contorted and fantastic lines, are dark brown, reddish brown, and blackish. The rarest varieties appear to be those with an almost grass-green ground, and eggs of a warm white colour closely clouded and marked with reddish brown and dark brown. In size those in my collection vary from  $3\frac{2}{40}$  by  $1\frac{3\frac{5}{10}}{40}$  inch to  $3\frac{1}{2}$  by  $2\frac{2}{40}$  inches.

The food of the Guillemot consists almost entirely of small fish, frequently the herring-fry; but it feeds on small crustaceans, marine insects, and, it is said, also on small bivalve shell-fish. It dives with great ease, moving about quickly under the surface of the water, and will remain underneath for some time. An excellent opportunity of watching the movements of this species when under water is afforded at the Brighton Aquarium, where several Guillemots belonging to Mr. E. T. Booth are exhibited in one of the tanks. When standing in front of the tank and looking up, one sees only a portion of the body and two legs paddling about, the rest of the bird being quite invisible; but every now and then it peers down into the water, then showing its head and neck. When it dives it plunges below like a flash, evidently with considerable force, sometimes straight down, sometimes in an oblique direction, bringing down in the plumage a quantity of air—which it lets off, as it moves along, in a stream of small bubbles, which look like silvery pearls. It moves about under the water almost as if in the air, the wings being tolerably

extended, and evidently used to propel it. Its movements are quick and easy, and it turns and twists about with great celerity and grace. I observed when watching these birds that they evidently had some trouble to keep themselves at the bottom of the tank; for when they picked any thing up from the ground they used a good deal of exertion to avoid rising up, and in so doing emitted a stream of pearl-like silvery bubbles. I ascertained, by timing them, that they remained below the surface about thirty to thirty-five seconds.

The specimens figured are an adult in winter and an old male in summer dress, the latter of the variety usually known as the Ringed or Bridled Guillemot.

In the preparation of the above article I have examined the following specimens:—

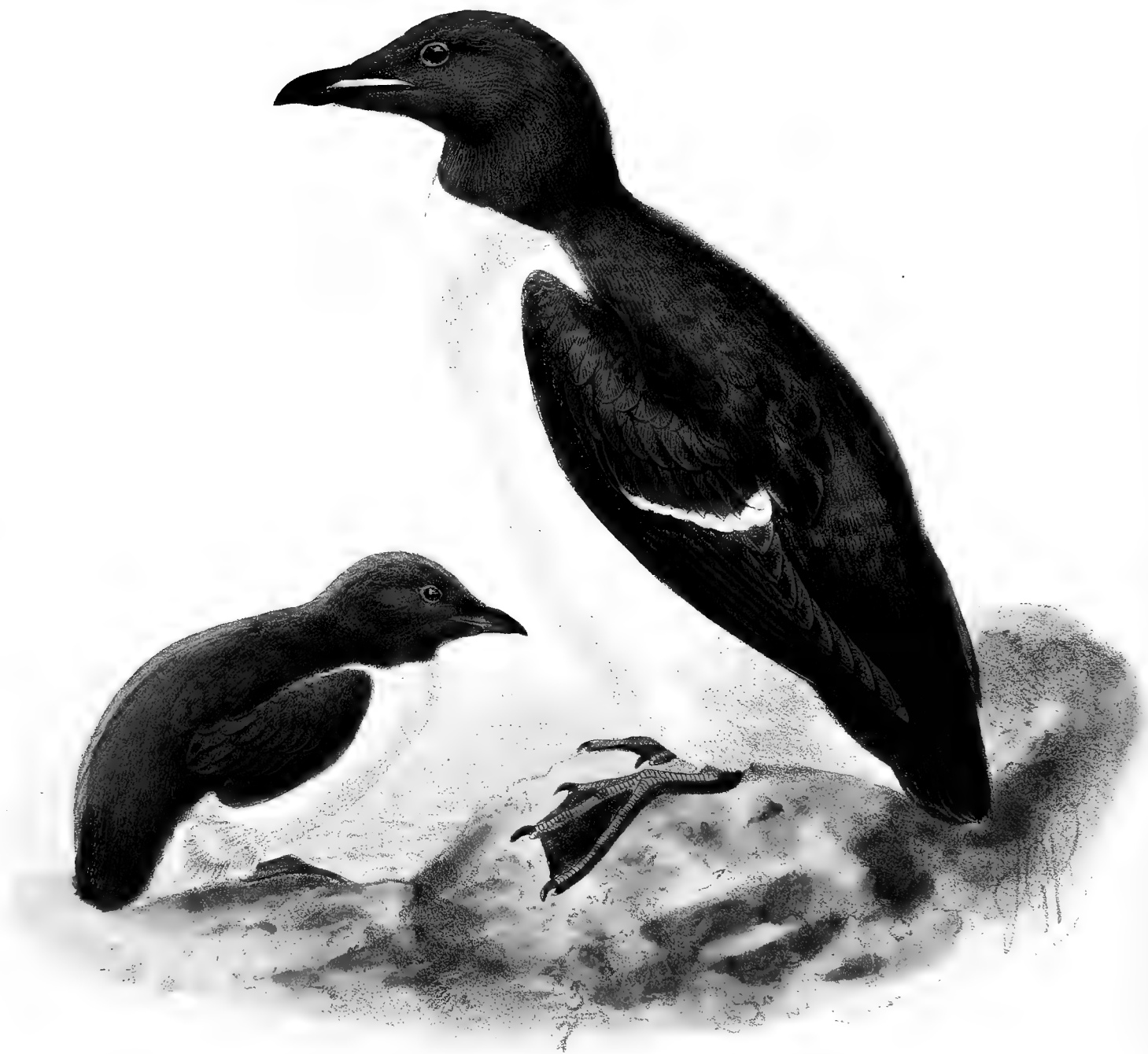
*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Flamborough, Yorkshire, June. *b*, *ad.*, var. *ringvia*. Orkney (*Dunn*). *c*, *ad.*, *d*, *jun.* Leadenhall Market, November 9th, 1871. *e*, *f*, *pull.* Lundy Island, July 1872 (*H. Saunders*).

*E Mus. H. Burton.*

*a*, *b*, *c*, *d*, *e*, *f*. English coast, summer dress. *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*. English coast, winter dress. *q*, *r*, *s*, *t*. Near Brighton, winter (*E. Booth*).





BRUENNICH'S GUILLEMOT.  
ALCA ARRA.

## ALCA BRUENNICHII.

(BRÜNNICH'S GUILLEMOT.)

*Uria troille*, Brünn. Orn. Bor. p. 27 (1764).*Uria svarbag*, Brünn. Orn. Bor. p. 27 (1764).? *Alca pica*, Fabric. Faun. Groenl. p. 79 (1780, nec Linn.).*Uria brünnichii*, Sabine, Trans. Linn. Soc. xii. p. 538 (1818).*Uria francsii*, Leach, Trans. Linn. Soc. xii. p. 588 (1818).*Uria polaris*, C. L. Brehm, Vög. Deutschl. p. 984 (1831).*Uria unicolor*, C. L. Brehm, Vög. Deutschl. p. 985 (1831).*Uria arra*, Keys. & Blas. Wirbelth. Eur. p. 92 (1840, nec Pall.).*Catarractes lomvia*, Bryant, Mon. Gen. Catarr. in Proc. Bost. Soc. Nat. Hist. 1861, p. 9, figs. 1-4.*Uria lomvia*, Bryant, Proc. Bost. Soc. Nat. Hist. 1861, p. 75.*Alca brünnichii* (Sab.), Malmgr. Öfv. K. Vet. Akad. Förh. 1863, p. 111.*Alca arra*, Schlegel, Mus. Pays-Bas, Urinatores, p. 16 (1867, nec Pall.).*Lomvia svarbag*, Coues, Proc. Ac. Nat. Sc. Phil. 1868, p. 80, ex Brünn.*Dickschnabel-Lumme*, German; *Groote Zeekoet*, Dutch; *Brünnich's Teiste*, Danish; *Akpa*, Greenlandic; *Stutnefia*, Icelandic; *Lomvi*, *Spidsnæbbet Alke*, Norwegian; *Brünnichs-Grisla*, Swedish.*Figuræ notabiles.*Werner, Atlas, *Palmipèdes*, pl. 69; Kjærb. Orn. Dan. taf. 52; Naumann, Vög. Deutschl. taf. 333; Sundevall, Svensk. Fogl. pl. 80. figs. 3, 4; Gould, B. of Eur. pl. 398; Schlegel, Vog. Nederl. pl. 265; Audub. Orn. Biogr. pl. 345.*Ad. ptil. æst.* capite et collo toto nigris, pileo et collo postico vix viridi nitentibus, capitis et colli lateribus, mento et gulâ ferrugineo-fusco tinctis: corpore suprâ, alis et caudâ nigris, secundariis albo terminatis: corpore subtùs albo: rostro nigro, marginibus maxillæ ad basin flavo-albis: pedibus suprâ flavido-olivaceis, subtùs plumbeo-nigris: iride fuscâ.*Ad. ptil. hiem.* gulâ et mento albis nec nigris, et corpore suprâ sordidiore.*Adult Male in summer* (Greenland). Crown, nape, and upper parts generally deep glossy black, on the head and neck with a faint greenish gloss; wings and tail black, the secondaries tipped with white, forming a white bar across the wing; chin, throat, and sides of the head black, tinged with deep reddish brown; rest of the underparts pure white; bill stout, blackish in colour, the ridge of the upper mandible white with a greenish yellow tinge; legs and feet black with a leaden tinge; the upper part of the toes and the tarsus tinged with deep yellowish olive; iris dark brown. Total length about 16·5-17 inches, gape 2·25, wing 8·5, tail 2·2, tarsus 1·5.*Adult Female.* Resembles the male.

*Adult in winter.* Differs from the adult in summer in having the upper parts a trifle duller in colour, the chin and throat white, and not black.

*Young* (Ice Sound, W. Spitsbergen, 16th August). Resembles the adult in summer dress in general coloration; but the colours are duller; and it is much smaller in size, being scarcely larger than a Little Auk, though fully feathered; bill and legs dark plumbeous.

THIS species, differing from its ally the common Guillemot chiefly by its short stout bill, is found in much higher latitudes than that species, being common in the Arctic Seas of both the Old and New World; and during the winter season it is met with as a straggler to the coasts of Continental Europe, and in the United States as far south as Massachusetts.

It only occurs on the coasts of Great Britain as a rare straggler during the winter season, and has never been met with breeding with us. Macgillivray says that he never saw but one British-killed example, viz. one belonging to Mr. Wilson, janitor to the Edinburgh University, which was sent amongst some skins from Orkney; Messrs. Baikie and Heddle say that it has occurred once or twice in Orkney; Captain Sir James C. Ross reported having seen it off the island of Unst; but Dr. Saxby says that he knows of no instance of one having been obtained there or elsewhere in Shetland, and a reward offered by him to the climbers resulted in failure to obtain one, and they assured him that no such bird existed there. Mr. Robert Gray says (B. of W. of Scotl. p. 422) that one, said to have been obtained in Caithness, was in the collection of Mr. E. S. Sinclair, where it was seen and identified by the late Mr. Wilson, of Woodville; and Mr. More states (Ibis, 1865, p. 449) that one was obtained by the late Sir William Milner in Sutherlandshire. Mr. Gray also mentions that he had for examination a specimen preserved by a bird-stuffer at Hamilton, and said to have been obtained on the west coast of Scotland. Referring to its having been stated to inhabit St. Kilda, Mr. Gray writes (*l. c.*) as follows:—"Though this species has been said to be a native of St. Kilda, I can find no reliable information on the subject of its breeding there. None of my correspondents who have visited St. Kilda appear to have recognized the bird at all."

Its occurrence in Ireland is somewhat doubtful. Captain Sabine says that he "recognized it in flight" on the coast of Kerry in July 1833, which I cannot believe it is possible to do; and Mr. Thompson writes that Dr. Harvey, of Cork, received a Guillemot, said to be the present species, from Youghal about the 1st of February 1850.

In Greenland it is, Professor Newton states, doubtless the commonest bird on the coast, but is said not to breed south of lat. 64° N. Holböll met with three specimens, entirely black—two near Godthaab, and one at the Sukkertop, but all in winter. Referring to its occurrence in Iceland, Professor Newton also writes (Notes Orn. Icel. p. 22) as follows:—"Faber seems to have been in doubt whether this was really distinct from the common Guillemot, as he found so great a resemblance in their habits. Olafsen mentions it (pp. 355, 562) in reference to two localities, Snæfellsnes and Látrabjarg; but in one place he considers it to be the female of the last-mentioned species. He gives a figure of it (tab. xxii), which shows what he is speaking about. Faber appears to consider that it bred, in company with the other species, all round the coast. Mr. Proctor found it at Grimsey. Herr Preyer shot one at Reykjavik. I was told it was occasionally met with at Hafnaberg in the breeding-time; but I never saw it there, nor, indeed, elsewhere in Iceland.

I do not find it recorded from the Færoes; but in Scandinavia it is occasionally met with, and, according to Professor Nilsson, it breeds, strange to say, as far south as the Baltic. Mr. R. Collett informs me that he has never yet been able to find a colony of Brünnich's Guillemots breeding on the coast of Norway, and doubts if it ever does breed there. The colony of Guillemots which inhabits the most northern point in that country, viz. on Stappen, near the North Cape, appears to consist solely of the common species. In the winter flocks of this species occur off the coasts, generally in company with the common Guillemot, but occasionally in separate flocks, and sometimes they penetrate up the fiords. Specimens Mr. Collett has examined from the Christianiafiord have usually been birds of the year, which had still the remains of the first plumage, having the throat more or less blackish. They usually appear in Southern Norway in November. Professor Nilsson states that it breeds on the Carlsöar, off Gottland, on the Swedish coast, a locality much further south than any in which I find it recorded as breeding by any one else. It has not been met with on the coasts of Finland, but doubtless occurs on the northern coasts of Russia, as it is common on Novaya Zemlya and Spitsbergen, being in the latter place, Professor Malmgren states, the most numerous species, and breeding in large numbers on the so-called Alkefjell, where it takes possession of the broadest portion of the fell-side above the Black Guillemot and Spitsbergen Puffin. It is still numerous on the mountainous islands above 80° 5' N. lat., as, for instance, on Walden Island. It feeds chiefly on crustacea (Amphipoda), but devours also large numbers of fish. Professor Newton says that Sir James Ross did not meet with it beyond Walden and Little Table islands, and he did not see it to the eastward of South Cape. By about the end of August, he observes, they were rapidly quitting their breeding-haunts. Mr. Gillett met with this Guillemot commonly on the coasts of Novaya Zemlya; and Dr. Th. von Heuglin, who also met with it there, states that this appears to be its eastern limit.

According to Borggreve it is a rare winter straggler to the coasts of Germany, and has been obtained by Mr. Boeck near Danzig. It appears to be a very rare straggler to the Danish coasts; for Kjærbølling only cites one instance of its occurrence there, viz. that of a specimen received by Mecklenburg from Handeved, near Flensborg, on the 24th November 1836; and in the new edition of Kjærbølling's work now being published, the editor, Mr. Collin, says that he purchased two of a game-dealer in Copenhagen on the 13th February 1856, which were in full summer plumage. It is stated to have occurred on the German coasts of the North Sea; and Professor Schlegel says that it is met with rarely in winter on the Dutch coast. It is not recorded from the coast of Belgium, nor do Messrs. Degland and Gerbe cite any instance of its occurrence in France; but Mr. E. Hargitt possesses a fine specimen obtained at Havre.

I do not find it recorded from the northern shores of Asia; but it has been recorded from various parts of North America, and is met with during winter as far south as the Northern and Middle United States. According to Mr. Dall it was not uncommon at Kadiak, and abundant at St. George's in August, where it breeds on the perpendicular cliffs. In Arctic America it is said to be very generally distributed. I met with it during the winter on the coasts of New Brunswick; and it is said by Bryant to breed in the Gulf of St. Lawrence. Dr. E. Coues states that he possesses it from New Hampshire; and examples are in the Philadelphia Museum from New Jersey, in both cases obtained in the winter.

In general habits this bird does not differ from the Common Guillemot; and it is difficult to

distinguish it from that species at any distance where its stouter bill and the conspicuous ivory-white patch along the basal margin of the maxilla cannot be discerned. I met with it first in the Bay of Fundy; and until I shot and handled the specimens I thought that they were common Guillemots. It breeds, like the common species, in cliffs near the sea, depositing a single egg, without making any nest. I possess a fair series of the eggs of this species from Greenland; and on comparing them with those of the common Guillemot from the English coast, they seem to me to be a trifle more brightly coloured; but there is otherwise no difference, and I do not know of any character by which the eggs of these two species may be distinguished.

As is the case with many of our European birds the unravelling of the synonymy of this bird presents considerable difficulty. There is no doubt that it is the *Alca lomvia* of Linnæus (Syst. Nat. ed. x. p. 130. no. 4, 1758); for he describes it as follows:—"Rostro lævi oblongo mandibulâ superiore margine flavescente;" but according to the rules of synonymy by which I have always been guided, this name cannot be used, as it dates from prior to 1766. Nor can Brünnich's specific name of *svarbag* be utilized, for the same reason. The name next in order is that given by Pallas, in 1811, of *arra*, which has been used by many authors; and until I more carefully worked out the synonymy, I believed that this was the correct name; and as the Plates were printed off previous to the departure of the late Arctic expedition, in order that I might give the naturalists copies, I lettered it accordingly. It seems, however, that this specific name must also be abandoned; for Pallas's description will not agree with the present species. Comparing it with his *Cepphus lomvia*, which is the Californian Guillemot, he says—"Rostrum multo minus et diversissimum, brevius, compressius, minus robustum, superius magis curvilineum, sulco utrinque ad dorsum obsoletissimo versus caput, carina in medio argute angulata, basi minus denudatum." As the Californian Guillemot differs only from *Alca troile* in the form of the bill, and in having a white iris, it is clear that the bird described by Pallas cannot be Brünnich's Guillemot, which has the bill stouter than in either the common or the Californian Guillemot; and I therefore have to use the specific name next in order, viz. that of *brünnichii* given to it by Sabine in 1818. I may also remark that the *Alca pica* of Fabricius (*l. c.*) is probably also Bruennich's Guillemot; but the *Alca pica* of Linnæus (Syst. Nat. i. p. 210, 1766) is certainly not that bird, but the young of the Razor-bill.

The specimens figured are an adult bird, in full breeding-dress, from Greenland, and a very young specimen obtained by Professor Newton in Spitsbergen.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, *ad. ptil. æst.* Greenland (*Erichsen*). *b*, *c*. Mace's-Bay Ledges, Bay of Fundy, December (*H. E. D.*).

*E Mus. Cantab.*

*a*. No locality. *b*, *juv.* Ice Sound, W. Spitsbergen, August 16th, 1864 (*A. Newton*).

*E Mus. A. and E. Newton.*

*a*, ♂, *b*, ♀. Ice Sound, W. Spitsbergen, July 1864 (*A. Newton*). *c*, ♀. Alken Horn, Ice Sound, W. Spitsbergen, July 9th, 1864 (*Wagstaffe*). *d*. Safe Haven, Ice Sound, August 16th, 1864 (*A. N.*). *e*, ♀. Stor Fjord, Spitsbergen, August 1864 (*Wagstaffe*).

## Genus URIA.

*Uria*, Brisson, Orn. vi. p. 73 (1760).

*Colymbus* apud Linnæus, Syst. Nat. i. p. 220 (1766).

*Cepphus* apud Pallas, Spicil. Zool. v. p. 33 (1769).

*Grylle* apud Leach, fide Stephens in Shaw's Gen. Zool. xii. pt. 2, p. 250 (1824).

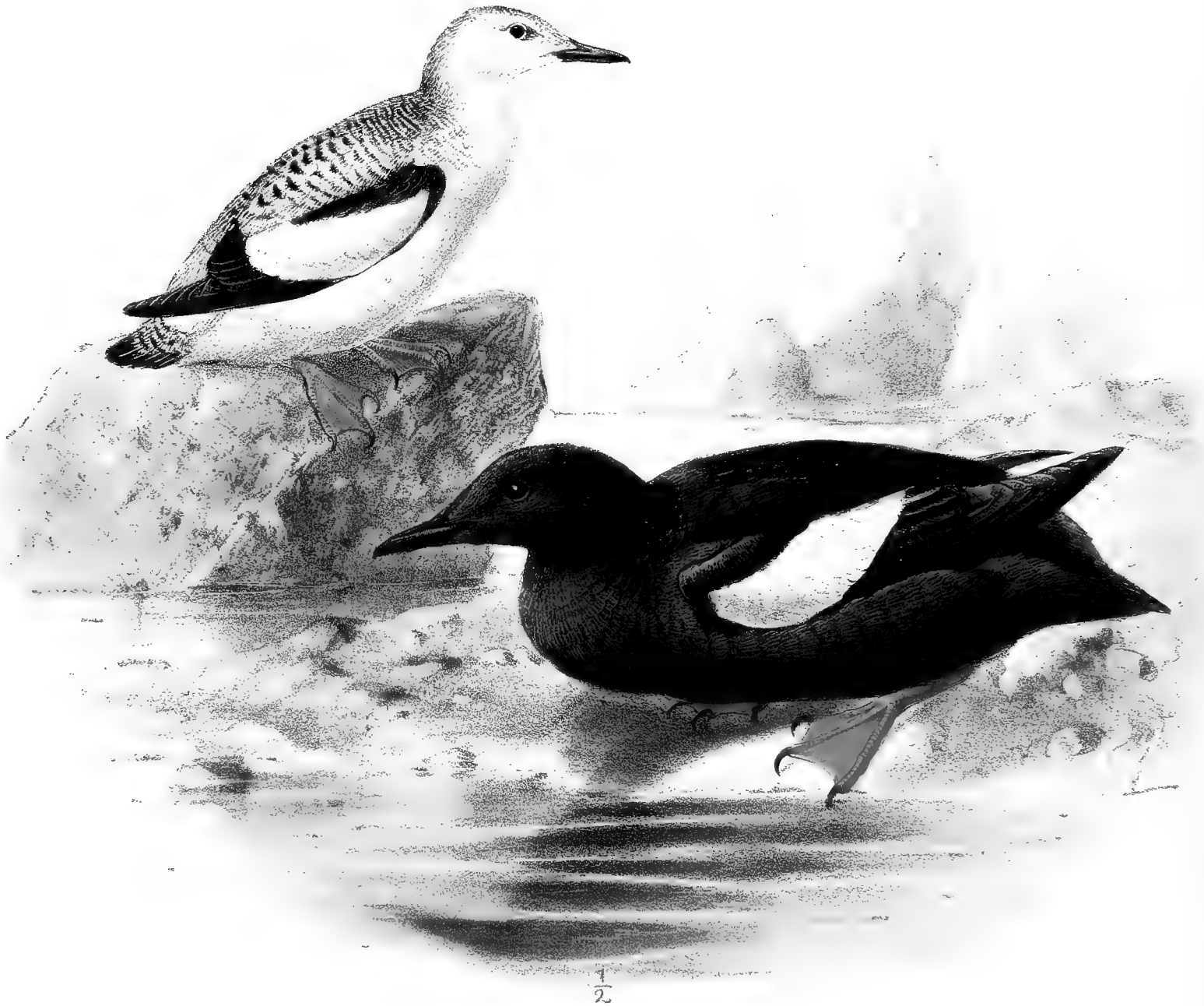
*Cephus* apud C. L. Brehm, Vög. Deutschl. p. 987 (1831).

IN this genus I have included only the Black Guillemot and its allies (*Uria mandti*, *Uria columba*, and *Uria carbo*), which inhabit the northern portions of the Palæarctic and Nearctic Regions, the first two only being found in the Western Palæarctic Region. In general habits these birds resemble the common Guillemot not a little; and like that species they are oceanic, being usually found tolerably far out at sea, except during the breeding-season. They swim with ease, sitting very lightly on the water, and dive extremely well, frequently remaining for some time below the surface. Their flight is quick, direct, and performed by a perpetual rapid beating of the wings. Unlike the species I have included in the genus *Alca*, those belonging to the present genus do not place a single egg on the exposed ledge of a rock, but they lay two or three eggs on the bare ground or gravel, or more frequently in the cleft of a rock or under a stone, sometimes near the edge of the water, or sometimes at a considerable altitude in the cliffs. Their eggs are usually white, or occasionally white with a pale greenish tinge, and are spotted and blotched with pale purplish and dark blackish brown.

*Uria grylle*, the type of the genus, has the beak rather longer than the head, moderately stout, nearly straight, tapering, the tip narrowed, rounded, sharp-edged, the nasal sinus broad and feathered, the nostrils basal, linear; wings small, pointed, the first quill longest; tail short, slightly rounded; legs short, stout, placed far behind; tibia bare for a short distance; the tarsus stout, compressed, covered with small, irregular, roundish scales; hind toe wanting, anterior toes moderately long, connected by webs, the inner toe much shorter than the outer one; claws stout, slightly arched, rather blunt, that on the middle toe dilated on the inner edge.







BLACK GUILLEMOT.  
URIA GRYLLE.

## URIA GRYLLE.

(BLACK GUILLEMOT.)

- Uria minor*, Briss. Orn. vi. p. 73 (1760).  
*Uria minor nigra*, Briss. Orn. vi. p. 76 (1760).  
*Uria minor striata*, Briss. Orn. vi. p. 78 (1760).  
*Colymbus grylle*, Linn. Syst. Nat. i. p. 220 (1766).  
*Cephus lacteolus*, Pall. Spicil. Zool. v. p. 33 (1769).  
*Colymbus gryllus*, O. F. Müll. Zool. Dan. Prodr. p. 18 (1776).  
*Colymbus lacteolus* (Pall.), Gmel. Syst. Nat. i. p. 583 (1788).  
*Uria grylle* (L.), Lath. Ind. Orn. ii. p. 797 (1790).  
*Uria lacteola* (Pall.), Lath. Ind. Orn. ii. p. 798 (1790).  
*Uria nivea*, Bonnat. Encycl. Méthod. Orn. p. 37 (1790).  
*Uria leucoptera*, Vieill. Nouv. Dict. xiv. p. 35 (1817).  
*Uria scapularis*, Steph. in Shaw's Gen. Zool. xii. pt. ii. p. 250 (1824).  
*Grylle scapularis*, Leach, fide Steph. tom. cit. p. 252 (1824).  
*Uria arctica*, C. L. Brehm, Lehrb. eur. Vög. ii. p. 923 (1824).  
*Uria meisneri*, C. L. Brehm, tom. cit. p. 1006 (1824).  
*Cephus grylle* (L.), C. L. Brehm, Vög. Deutschl. p. 987 (1831).  
*Cephus arcticus*, C. L. Brehm, op. cit. p. 988 (1831).  
*Cephus meisneri*, C. L. Brehm, op. cit. p. 989 (1831).  
*Cephus faeroensis*, C. L. Brehm, op. cit. p. 990 (1831).  
*Uria groenlandica*, Gray, List of Genera of Birds, p. 98 (1840).  
*Grylle groenlandicus*, Gray, List of Genera of Birds, p. 77 (1841).  
*Grylle columba*, Bp. Ucc. Eur. p. 82 (1842, nec Pall.).  
*Uria färöensis*, C. L. Brehm, Vogelfang, p. 407 (1855).

*Black Guillemot*, *Greenland Dove*, *Tystie*, *Dovekie*, English; *Geara-breac*, Gaelic; *Guillemot grylle*, French; *Gryll-Teiste*, German; *Almindelig-Teiste*, Danish; *Tajsti*, Færoese; *Serbak*, *Sergvak*, *Kernekongojuk*, *Kernektarsuk*, *Kakortungojuk*, Greenlandic; *Tejsti*, Icelandic; *Teist Peer-Drikker*, Norwegian; *Tobisgrislå*, Swedish; *Riskiläinen*, Finnish.

*Figuræ notabiles.*

Werner, Atlas, *Palmipèdes*, pl. 70; Kjærbo. Orn. Dan. taf. 52; Naumann, Vög. Deutschl. taf. 330; Sundevall, Svensk. Fogl. taf. 52. figs. 5, 6; Gould, B. of Eur. p. 399; id. B. of G. Brit. v. pl. 49; Audub. B. of Am. pl. 474.

*Ad. ptil. æst. saturatè niger*: corpore suprà viridi-nigro nitente et subtùs fuliginoso-nigro-fusco: tectricibus alarum minoribus et medianis albis, fasciâ nigrâ celatâ: subalaribus et axillaribus albis: rostro nigro: iride fuscâ: pedibus cinnabarinis.

*Ad. ptil. hiem.* pileo albo, conspicuè nigro notato: dorso nigro, plumis latè albo marginatis: uropygio fere omnino albo: alis et caudâ sicut in ptilosi æstivali picturatis: corpore subtùs, gulâ et gutture albis immaculatis.

*Juv.* pileo et nuchâ cum collo postico nigro-fuscis: capitis et colli lateribus albis, saturatè griseo-fusco notatis: alis et caudâ sicut in adulto picturatis sed sordidioribus, maculâ alari nigro notatâ: corpore subtùs albo, pectore et hypochondriis vix nigro-fusco notatis.

*Adult Male in summer* (Greenland). Entire plumage deep black, except a white patch on the wings; upper parts glossed with a greenish lustre; underparts with a sooty brownish black tinge; central and larger wing-coverts white, but black on the concealed base of the feather; under wing-coverts and axillaries white; bill black; legs rich vermilion-red with a coral tinge; iris dark brown. Total length about 12 inches, culmen 1·4, wing 6·4, tail 2·2, tarsus 1·15.

*Adult Female* (Greenland). Undistinguishable from the male in colour.

*Adult in winter* (Orkneys). Crown white, strongly marked with black, the feathers being really black at the base, but so broadly tipped with white as almost to hide the black colour; back and rump black, the feathers broadly margined with white, the rump nearly all white; wings and tail as in the summer; rest of the plumage and entire underparts pure white.

*Young* (Orkneys). Crown and hind neck dull blackish brown; sides of the head and of the neck white marked with dark greyish brown; upper parts blackish brown, slightly marked with white; the wings and tail as in the adult, but duller black, the white patch on the wing blotched with black; underparts white, the breast and flanks slightly marked with blackish brown.

*Nestling.* Covered with sooty blackish down, uniform in colour.

DURING the summer season the Black Guillemot inhabits the northern portions of both the Palæarctic and Nearctic Regions, ranging southward during winter; but it does not penetrate very far south. In Great Britain it is resident, but is very rare during the breeding-season on the English coasts, though it breeds not uncommonly on many parts of the coasts of Scotland. Mr. A. G. More, in his notes on its breeding-range in Great Britain, says (*Ibis*, 1865, p. 450):—"In the time of Montagu a few pairs used to breed annually at Tenby; and it is possible that the bird is not yet extinct in this locality, as Mr. Tracy includes it in his list. Pennant mentions Llandudno and Anglesea; and Mr. J. F. Crellin finds the Black Guillemot breeding in small numbers in the Isle of Man. It breeds also on the east coast of Scotland, at St. Abb's Head (*Rev. J. Duns*), on the Bass Rock; on the Isle of May (*Sir W. Jardine*); at Stonehaven (*Dr. J. A. Smith*); and is pretty generally distributed in the north and west of Scotland." It occurs on the east coast of England in winter, but does not appear to breed there. Mr. Cordeaux says that it is occasionally met with in the neighbourhood of Flamborough and along the Yorkshire coast in the autumn, winter, and spring, and he has met with it there in mottled plumage as late as the end of May.

In Scotland, Mr. Robert Gray writes (*B. of W. of Scotl.* p. 427), it is "permanently resident, and may be called a common species on the whole of the western coasts, including both groups of islands. In the outer chain, or Long Island, the breeding-places are not so numerous as those

occurring on the same extent of coast-line on the mainland. It is found nesting on Berneray (Barra Head) and Mingalay, and also on various rocky islets northwards of these localities as far as the extremity of Lewis. There are breeding-places on the Shiant Isles, in the Minch, Ascrib Islands, in Loch Snizort, in the north of Skye, and similar groups of rocks on the western coast of that island; in the islands of Canna, Rum, and Eigg; in Coll, Tyree, the Treshmish islands, Iona, Staffa, and Mull; at Lenaig in Islay; and, finally, on Arran, south of which I have not been able satisfactorily to trace any breeding-place. On the mainland it has been found nesting in a number of places ranging from the island of Gigha, off the coast of Cantyre, to Handa on the west coast of Sutherlandshire." Mr. J. A. Harvie-Brown says that it is now rare in Handa, though it used formerly to be plentiful. It is, however, not uncommon on other islands off the west coast; and in one place he found more than twenty pairs in a colony. It is not so abundant on the west coast of Sutherland as it is in the north. In Ireland, as in Scotland, it is resident, and is found in suitable localities all round the coast.

It is, Professor Newton says, very numerous on both coasts of Greenland, and is said to remain in the autumn longer than any other bird. It is also plentiful on Melville Peninsula, but is more rarely seen in the Polar Sea. According to Faber, it is resident in Iceland, and appears to be generally distributed around the coast during the breeding-season. In the Færoes it is, Captain Feilden says, "a resident, and tolerably abundant throughout the islands. In the north isles, owing to the paucity of the population, and consequently fewer guns, it is more abundant than in Suderoe." It breeds on the coast of Norway from the Hvalöer to the Russian frontier, and visits the southern fiords oftener in the summer than in the winter, and is seen off Christiania not unfrequently in September and October. Nilsson says that during the summer it inhabits the coasts and small islands of Sweden, both in the Baltic and the North Sea, down to Skåne. It breeds off Kalmar Län, Bornholm, Gottland, Södermanland, Halland, Wäderö, off Skåne, in several places off Halland, and the coast of Bohuslän. On the Finland coasts it is, Dr. Palmén writes (Finl. Fogl. ii. p. 667), common at Schuretskaja and Sosnovetz, at Paukelofka, and along the coasts of the White Sea. It breeds at Uleåborg, on Karlö, and is numerous off Brahestad, and breeds at several places along the coast, as at Björneborg, the Åland Islands, Korpö, &c. It is not common off Helsingfors, and is found sparingly off Nyland. It breeds in pairs or colonies on the Onas coast, off Sibbo, at Äggskär, and Tunnholmen, near the Pelling lighthouse; and Huitze found it most numerous on Kittilskär, and Truthäll off Borgå. In Spitzbergen and Novaya Zemlya an allied but fairly distinguishable species (*Uria mandti*) is found; but I am informed by Mr. Collett that the present species only occurs on the coasts of Norway. A Black Guillemot is met with off the northern coasts of Russia, which is probably *Uria mandti*; but not having had an opportunity of examining a specimen from there, I am unable to state with certainty whether it really is that species or *Uria grylle*. In the Baltic *Uria grylle* is the only Black Guillemot found; and Borggreve says that it is of not rare occurrence on the Baltic coasts of Germany, but cannot be looked on as a regular winter visitant. According to Naumann it is met with in the winter on the coasts of Livonia, Prussia, Holstein, and Schleswig, as also off the mouth of the Elbe and Heligoland. According to Collin it breeds in Denmark, as, for instance, in Gjerrild Bay, on Hjelman, and Veirö, in which last locality Grill lately found several pairs breeding; and he also took eggs on Meilö, at Korshavn, on the 6th

June, 1871; and it has also been found breeding at Læsö, on the Nordrønner, on Bornholm, and Christiansö, on Hirtsholm and Dehlen, at Fredrikshavn, and on Hesselö. In the winter season it is much more numerous than in the breeding-season, as large numbers arrive from the north and remain to winter on the coast of Denmark. Professor Schlegel says he does not believe that it has been met with on the coast of Holland for the last forty years; but it is stated to occur as a rare straggler on the coasts of Belgium in winter after severe weather; and it occurs irregularly on the coasts of France, chiefly in the northern districts: but, so far as I can ascertain, it is unknown in Portugal, Spain, and the countries bordering the Mediterranean. I do not find that the present species occurs on the northern coasts of Asia; and if a Black Guillemot does occur there, it appears to me that it will be found to be *Uria mandti*.

On the American coasts it is very common on the Atlantic side of the continent, breeding numerously in the north, and in winter found as far south as New Jersey. It is said to be rare or accidental in the North Pacific; but it would be interesting to examine specimens from there, as I cannot but surmise that they would prove to be *Uria mandti*, and not true *Uria grylle*. On the east coast it is found very far north; and Captain Feilden, when on the recent Arctic expedition, met with it up to 82° 27' N. lat. I am indebted to this gentleman for the following notes, made by him during the expedition, viz.:—"On the 2nd of June 1875, as we left Bantry Bay, a Black Guillemot flew across our bows; and the next seen by us were a couple on the 4th July 1875, in lat. 66° N. beyond Sukkertoppen, well up Davis Straits. On the 9th July 1875, I found these birds breeding in great numbers on the small islands in Fortune Bay, Disco Island. We shot several for an addition to our supper, and thought them very good. We also took eleven eggs from the chinks of the rocks, and could have taken many more had we been provided with any instrument to pull them out with. As in the British Isles, this species lays two eggs; and those that I procured showed no great variation in their markings. On the 24th July, in passing through the middle pack, I observed but one Dovekie. On the 25th July, coasting along the Crimson cliffs, we noticed several. They were nesting in the clefts of the rocks, where I found *Larus glaucus* breeding on the Carey Islands; and as I ascended several flew out. On the 27th and 28th July, as we passed Cape Alexander, Dovekies were numerous. When we lay at Brevoort Island we noticed several Dovekies fishing in the pools of water between the broken floes. On the 4th August, in Hayes Sound, I saw one. In the lofty Silurian conglomerate cliffs of Washington-Irving Island many Dovekies were nesting, and they flew up and down to the water in parties of six to a dozen; their breeding-places were at an altitude of over three hundred feet. Their note is a low plaintive whine, which they utter frequently as they swim about fishing for entomostraca; and they dive well when alarmed, and swim a considerable distance under water before again rising to the surface. I shot here a specimen which showed some variation in the amount of white on the scapulars. When walking under cliffs of great altitude tenanted by Dovekies, we not unfrequently heard a rushing sound of wind, which some of our people put down to sudden gusts of air. I satisfactorily assured myself that this was due to the wings of the Dovekie; for I watched the black specks leave the cliff, followed them with my eye as they passed overhead accompanied by this peculiar sound, and saw them alight in the water at my feet, when the sound ceased. August 14th, 1875. The Dovekies breed here at Cape Hilgard, in the perpendicular limestone cliffs, at great altitudes, not less than eight

hundred feet above the sea, the débris extending from the shore three hundred feet to the cliffs being too compact to afford secure nesting-retreats. In descending to the sea these birds make such a swish through the air that some of our party mistook the sound for gusts of wind. On the 18th August, when embayed in the ice not far from the shore, in lat.  $79^{\circ} 37' N.$ , numbers of Dovekies that breed in the neighbouring cliffs were constantly visiting the pool of water in which we lay. Fish must have been abundant; for they did not take long to capture one, which they held in their bills by the head. I did not observe them, as they returned to land, ever carrying more than one fish at a time. On the 23rd August, at Bessels Bay, Dovekies were numerous, and they flew up to the cliffs with fish in their bills. I shot here a female, with a fish in her bill, as she passed the boat in which I was; but the fish sank before we reached the bird. On the 29th August 1875, in Ship-rudder Bay, I saw a single Dovekie; and on the morning of the 2nd September, in lat.  $82^{\circ} 27' N.$ , a single Dovekie flew past the ship, head to wind, which was blowing a gale at the time; and this was the last time when I observed this species in 1875."

In general habits the present species assimilates not a little to the common Guillemot; and, like that species, it is a sea-bird, found, except during the breeding-season, tolerably far out at sea, though scarcely so much so as that species, and subsisting almost entirely on small fishes and crustacea, which it obtains chiefly by diving. For the purpose of nidification it resorts to the rock-bound portion of the coast, and frequently breeds in company with the Razorbill, Puffin, and common Guillemot.

It swims with ease, sitting very lightly on the water, and dives like a flash, slightly extending its wings as it plunges below the surface. When fired at, or suddenly alarmed, when swimming, it usually dives, but will sometimes take wing, which it appears to do with some difficulty, striking the water with its wings and feet for some distance. Its flight is, Macgillivray says, "quick, direct, performed by a perpetual rapid beating of the wings. In proceeding to a distance they often fly in small strings, low over the water, now inclining a little to one side, then to the other. When their nests or roosting-places are high on the rocks, they gradually curve upward as they approach them, and alight abruptly. On the ground they move little about, although on occasions they walk moderately well, and prettily, with short steps, and nearly erect. They repose either standing or lying flat on the rock."

Unlike the Auks and other Guillemots, the present species never deposits its eggs on the exposed ledges of the rocks, and instead of one egg it deposits two or three. It makes no nest, but deposits its eggs on the bare ground or gravel, in a cleft or under a large block of stone, sometimes near the water's edge, and sometimes at a considerable altitude. Its eggs, of which I possess a considerable series, are white, or greenish white, spotted and blotched with purplish shell-markings and blackish brown surface-spots and blotches, some being more and others less closely marked. One egg in my collection has the ground-colour pale sea-green; and another has the larger end almost entirely covered with one large blackish brown blotch. In size they vary from  $2\frac{1}{4}$  by  $1\frac{2}{4}$  inch to  $2\frac{2}{4}$  by  $1\frac{2}{4}$  inch.

Dr. E. Coues has, in his Monograph of the Alcidae, published in the Proc. Acad. Nat. Sciences of Philadelphia for 1868, treated very fully of the various species of Black Guillemot; and I can fully indorse his views, except that I cannot agree with him in uniting *Uria mandti* and *Uria grylle*, but follow Professor Newton in recognizing the claim of the former to specific

rank; for, as far as I can see, this latter gentleman is quite correct in the distinctive characters pointed out by him (Ibis, 1865, p. 519), by which the four species can be separated; but he omits to name that *Uria columba* always has the under wing-coverts smoky grey, and not white.

The four species may be briefly characterized as follows:—

*Uria grylle*. General colour black; a large space on the wing white, these feathers forming the white patch, having the basal portion black; no white about the head; under wing-coverts and axillaries white. The range of this species is given above.

*Uria mandti*. Resembles *Uria grylle*, but has a more slender bill, and the feathers forming the white patch on the wing are pure white without any black on the basal portion. Inhabits Spitzbergen and Novaya Zemlya.

*Uria columba* (Pall.) (Zoogr. Rosso-As. ii. p. 348). General colour black; a large white patch on the wing divided by a triangular black patch; under wing-coverts dark sooty grey, not white. Inhabits the Asiatic and American coasts of the North Pacific.

*Uria carbo* (Pall.) (Zoogr. Rosso-As. ii. p. 350, pl. 79). General colour black; no white patch on the wings; feathers around and behind the eye, and at the base of the bill, white; in size larger than the preceding species, the bill especially being longer and stouter. Inhabits the Aleutian Isles, Kamtschatka, and Japan.

I may here remark that the best distinction between *Uria columba* and *Uria grylle* is the difference in coloration of the under surface of the wing; for the division in the white patch on the wings is scarcely characteristic. I have now before me a specimen of *Uria grylle* from Orkney, in full summer dress, which has the wing-patch divided through the centre by a broad stripe of black. Indeed in many of my specimens this stripe is more or less developed; but in most it is concealed, though it can always be seen if the feathers are moved.

I have omitted from the synonyms of the present species *Uria unicolor*, Brehm (Isis, 1826, p. 988), which appears to be a somewhat doubtful species, and is described as being larger than *U. grylle*, and entirely black. This supposed species appears to be the same as *Uria motzfeldi*, Benicken (Isis, 1824, pp. 888, 889), and is supposed to come from Iceland. As stated by Professor Newton (*l. c.*), there is in the British Museum a Guillemot entirely black all over, which was purchased from Mr. Argent, and is said to have come from Iceland; but it may possibly be a variety of *Uria carbo* lacking the white eye-patch.

The specimens figured are the adults in summer plumage and in winter dress above described, and are in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Greenland (*Dr. Kutter*). *b*, ♂, summer, *c*, adult in change, *d*, *juv.* Greenland (*Erichsen*). *e*, ♀ *ad.* Lichtenfels, S. Greenland, July 21st, 1874 (*Dr. O. Finsch*). *f*, ♂. Lichtenfels, December 10th, 1874 (*O. F.*). *g*, ♂, *h*, ♀. Orkney, summer. *i*, ♀ *ad.* in spring, *k*, *ad.* in change, *l*, ♀ *ad.* winter, *m*, *juv.* Orkney (*Dunn*). *n*, ♂ *ad.* Sutherlandshire, May 31st, 1869, taken off nest, with two eggs (*J. A. Harvie-Brown*).

*E Mus. A. et E. Newton.*

*a*, ♂. Fuglenæs, Qualö, Norway, July 1st, 1864 (*A. N.*).

## URIA MANDTI.

(SPITZBERGEN GUILLEMOT.)

*Uria mandtii*, Licht. in Mandt, Observat. &c. Diss. inaug. p. 30 (1822).*Uria mandtii*, Licht. Verz. Doubl. p. 88 (1823).*Uria glacialis*, C. L. Brehm, Lehrb. eur. Vög. ii. p. 1008 (1824).*Cephus glacialis*, C. L. Brehm, Vög. Deutschl. p. 991 (1831).*Uria mandtii*, Licht., Bp. Comp. List, p. 65, laps. cal. (1838).*Grylle mandtii* (Licht.), Bp. Ucc. Eur. p. 82 (1842).*Uria grylle mandtii*, Schlegel, Rev. Crit. p. 107 (1844).*Uria grylle* auctt. partim.*Figura nulla.**Uria gryllæ* similis, sed rostro graciliore, tectricibus alarum ad radices albis, facile distinguenda.

*Adult Male* (Spitzbergen, 10th July). Resembles *Uria grylle*, but has the bill slightly smaller; and the feathers constituting the white patch on the wing are white to the base, and not black on the basal portion as in *U. grylle*. Culmen 1·5 inch, wing 6·4, tail 2·0, tarsus 1·1.

*Adult Female* (Spitzbergen). Resembles the male.

*Obs.* In the different stages of plumage from the nestling to the old bird, and from summer to winter, this species assimilates closely to *Uria grylle*. The elongated white-tipped secondaries have been cited as characteristic of this bird: but this is not the case; for I only observe it in specimens which are not in fresh, full plumage; and it is probably dependent on the age of the feathers, for those which show it have the quills worn down to a greyish tinge.

THE present species was first recognized as specifically separable by Lichtenstein in 1822; but since then it has by most authors been treated as identical with *Uria grylle*. Professor Newton appears to have been the first (*Ibis*, 1865, pp. 517–519) to point out the character by which it is most readily recognizable, viz. the absence of concealed black on the white wing-patch, and which was overlooked by Lichtenstein.

This Guillemot inhabits Spitzbergen, to the exclusion of *Uria grylle*, and Novaya Zemlya, and may possibly, I think, range still further east. So far as I can gather, it does not seem to visit the coasts of Greenland; for all the specimens I have seen from there are referable to *Uria grylle*. Professor Newton says (*l. c.*), "it is, with the exception of the Puffin, the least numerous of the *Alcidæ* in Spitzbergen; but it is plentiful enough for all that. Dr. Malmgren states that it breeds, in company with its allies, in the cliffs. The only eggs I procured were taken by one of our crew, who said they were lying on a low rock quite exposed, and not in a hole as I believe is always the case with those of our Black Guillemot; but they closely resemble those of that bird, and, from what I afterwards observed on Russö, I am inclined to think it also has the same

mode of nidification. I cannot discover from Dr. Malmgren's paper which form it is that inhabits Bear Island; and this is a point to which I hope future voyagers will pay attention. A great many of the Dovekies seen about Spitzbergen have all the appearance of being barren birds; and these often have the tips of their secondaries weathered, a fact which led Lichtenstein and Brehm to regard this accidental circumstance as a real character. Such specimens also generally have dusky tips to the white feathers of the upper wing-coverts, and therefore seem to be birds of the preceding year which have not fully moulted off their nestling-plumage."

Von Heuglin, in his Notes on the Ornithology of Novaya Zemlya (J. f. O. 1872, p. 124), says that he examined many specimens of Black Guillemots from there, and that all belong to the present species and not to *Uria grylle*; it appears, therefore, probable that *Uria mandti* is found off the northern coasts of Russia. In Novaya Zemlya, he says, it breeds in July and August in flocks under rocks on several of the islands, usually at no great altitude. The adult birds are most industrious in supplying the young with food; and he often saw them carrying fish six and eight inches long in their bills to their breeding-places. They do not commence moulting until the middle of September.

In habits and mode of nidification the present species does not differ from *Uria grylle*.

As the chief difference between the present species and *Uria grylle* is one difficult to show on a plate, I have not deemed it advisable to figure *Uria mandti*.

The specimens described are from Spitzbergen, and have been lent to me by Professor A. Newton, of Cambridge.

In the preparation of the above article I have examined the following specimens:—

*E Mus. A. et E. Newton.*

*a*, ♂ *ad.* Safe Haven, Ice Sound, West Spitzbergen, July 10th, 1864 (*A. Newton*). *b*, *jun.* Safe Haven, July 1864. *c*, ♂ *ad.* Safe Haven, August 15th, 1864. *d*, *juv.* Safe Haven, August 16th, 1864 (*A. N.*).

*E Mus. Cantab.*

*a*, ♂. Safe Haven, Spitzbergen, 1864 (*A. Newton*).

## Genus MERGULUS.

*Uria* apud Brisson, Orn. vi. p. 73 (1760).

*Alca* apud Linnæus, Syst. Nat. i. p. 211 (1766).

*Mergulus*, Vieillot, Analyse, p. 67 (1816).

*Cephus* apud Lesson, Traité d'Orn. p. 639 (1831).

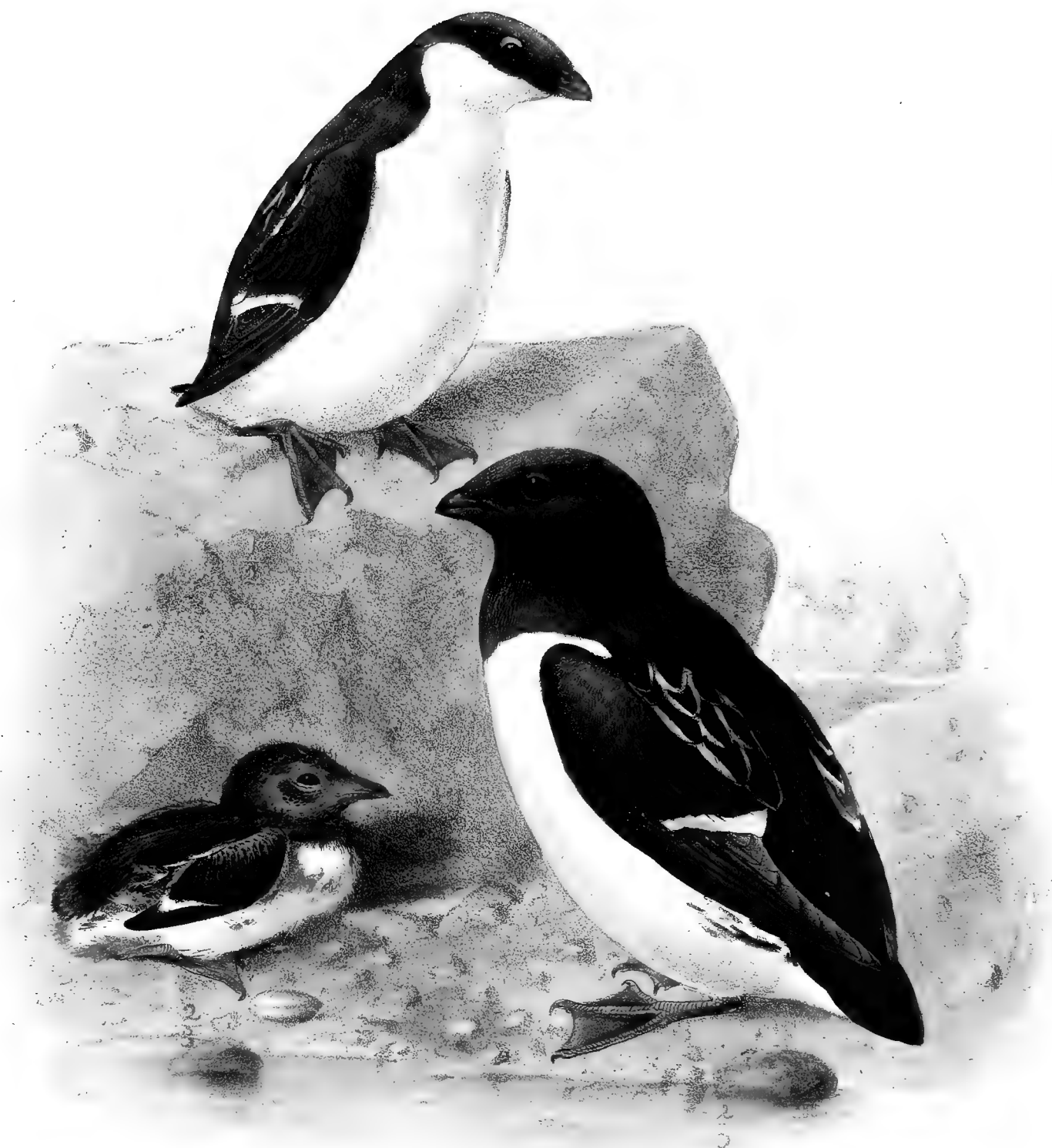
*Arctica* apud G. R. Gray, List of Gen. of B. p. 98 (1841).

THIS genus contains a single species, which inhabits the northern portions of the Palæarctic and Nearctic Regions, its exact range being given in the following article. In its habits it closely resembles the species included in the genus *Alca*, being essentially a marine bird; and, except in the breeding-season, it is seldom seen near or on land, unless driven in by stress of weather. It is said to be seen more often near or amongst drift ice than in the open clear sea; and numbers will often collect on a piece of floating ice. It feeds on small crustacea and fish, and appears to obtain its food chiefly by diving; and though it walks badly, like its allies it flies swiftly and with tolerable ease. It breeds in rocky places, and deposits a single pale greenish-blue egg in a cleft in the rock or amongst the stones and boulders, in such places that the foxes cannot get at it.

*Mergulus alle*, the type of the genus, has the bill much shorter than the head, as broad as high at the base, moderately compressed and decurved towards the end, the tip narrow, blunt, with a slight sinus, the nasal sinus broad, basal, angular, the nostrils basal, oblong, with a horny operculum; wings short, narrow, pointed, the first quill longest; tail very short, slightly rounded; legs very short, rather slender, placed far behind; tibia bare for a short distance; tarsus compressed, anteriorly scutellate; hind toe wanting; anterior toes moderate, connected by webs, the inner much shorter than the outer one, which is very little shorter than the middle one; claws moderate, curved, compressed, acute.







LITTLE AUK.  
MERGULUS ALLE.

## MERGULUS ALLE.

(LITTLE AUK.)

- Uria minor*, Briss. Orn. vi. p. 73 (1760).  
*Alca alle*, Linn. Syst. Nat. i. p. 211 (1766).  
*Petit Guillemot*, Buff. Hist. Nat. Ois. ix. p. 354 (1783).  
*Alca alce* (misprint for *alle*), Gmel. Syst. Nat. i. p. 554 (1788).  
*Uria alle* (L.), Pall. Zoogr. Rosso-As. ii. p. 369 (1811).  
*Mergulus*, Vieill. (*Alca alle*, Linn.) Analyse, p. 67 (1816).  
*Mergulus melanoleucos*, Leach, Syst. Cat. M. & B. Brit. Mus. p. 42 (1816).  
*Mergulus alle* (L.), Vieill. Nouv. Dict. xx. p. 209 (1818).  
*Cephus*, Less. (*Alca alle*, Linn.) Traité d'Orn. p. 639 (1831).  
*Mergulus arcticus*, C. L. Brehm, Vög. Deutschl. p. 994 (1831).  
*Arctica alle* (L.), G. R. Gray, List of Gen. of B. p. 98 (1841).

*Little Auk*, *Rötsche*, *Dovekie*, English; *Guillemot nain*, French; *Krabbentaucher*, German; *kleine Alk*, Dutch; *Lille-Krabbedykker*, Danish; *Fulkobi*, Færoese; *Akpallarsuk*, *Kærrak*, Greenlandic; *Haftirdill Halkion*, Icelandic; *Alkekonge*, Norwegian; *Alkekung*, Swedish; *Jääkyhkynen*, Finnish.

*Figuræ notabiles.*

Edwards, Nat. Hist. B. pl. 91; D'Aubenton, Pl. Enl. 917; Werner, Atlas, *Palmipèdes*, pl. 71; Kjærbo. Orn. Dan. taf. 52; Naumann, Vög. Deutschl. taf. 334; Sundevall, Svensk. Fogl. pl. 52. fig. 3; Gould, B. of Eur. pl. 402; id. B. of G. Brit. v. pl. 50; Schlegel, Vog. Nederl. pl. 262; Audub. Orn. Biog. pl. 339; Wilson, Am. Orn. pl. 74.

*Ad. ptil. æst.* capite et collo saturatè fumoso-nigris fusco tinctis: corpore suprâ nitidè nigro, cæruleo purpureo nitente, scapularibus albo marginatis: alis et caudâ nigris, secundariis albo terminatis: corpore subtùs albo, hypochondriis nigro striatis: rostro nigro-plumbeo: iride fuscâ: pedibus lividis.

*Ad. ptil. hiem.* gulâ, gutture et colli lateribus albis nec nigris, nuchâ vix albo notatâ: corpore reliquo suprâ et subtùs sicut in ptilosî æstivali picturato.

*Adult in summer* (Greenland). Entire head and neck deep sooty black with a brownish tinge; upper parts of the body and wing-coverts black with a purplish blue gloss, the scapulars margined with white; wings and tail black, the short secondaries broadly tipped with white; underparts white; flanks striped with black; bill leaden-black; legs dark livid flesh-colour; iris dark brown. Total length about 8 inches, gape 0.9, wing 4.8, tail 1.4, tarsus 0.82.

*Adult in winter* (Bay of Fundy). Differs from the adult in summer dress in having the entire throat white, the sides of the neck being also white, and the nape slightly marked with this colour.

*Nestling* (Spitsbergen, 23rd July). In general coloration of plumage resembles the adult in summer dress; but the feathering is scanty and shows the blue skin, and there are patches of sooty brown down here and there amongst the plumage.

THE present species inhabits the circumpolar portion of both the Western Palæarctic and Eastern Nearctic Regions, being driven southward to Continental Europe and the coasts of the United States only by stress of weather; but in the Atlantic Ocean it straggles in some numbers during winter as far south as the Canaries. With us in Great Britain it is an irregular winter visitant, not appearing every season; but it has at various times been met with on almost all parts of the coast. Yarrell writes (Brit. B. iii. p. 470):—"During the early part of November 1841 a few of these birds were sent for sale to the London markets. Some were taken at an unusual distance inland. Mr. Thrall, a collector in Hertfordshire, sent me notice of one, now in his possession, that was obtained on the mill-head at Wheathamstead. Another was picked up alive between Baldock and Royston, and is now preserved in the museum at Saffron Walden. I heard of others taken near Birmingham. Mr. Strickland recorded nine taken in Worcestershire, three in Shropshire, some at Bristol, and others near the Severn. The Little Auk, however, is a rare bird in the counties of Devon and Cornwall. Mr. W. Thompson has noticed its occurrence in Ireland, at Wexford and at Kerry; at the latter it is suspected that it may breed in the same locality as Brünnich's Guillemot. It has been shot in winter in Cumberland." I have seen specimens obtained on the south coast of England; and it has been recorded from various parts of the east coast. Mr. Cordeaux says (B. of Humber Distr. p. 186):—"In severe weather it is sometimes seen within the Humber. There are numerous instances of the Little Auk occurring far inland, driven in by stress of weather. Mr. Boulton had two in the flesh, shot on the river Hull in the autumn of 1861, one late in October, the other on the 9th of November, in that year. I have one in winter plumage taken on the decoy at Ashby in the latter part of 1864. In the autumn of 1863 very large flocks of the Little Auk appeared off the coast of Durham and on the river Tees; and many were at that time procured." Mr. Hancock also states that in November 1841 this species visited the coasts of Northumberland and Durham in great numbers. They moved in a northerly direction, and continued to pass in detached flocks for several days. In a few days he had sent to him twenty-six specimens. It is somewhat remarkable that in Scotland this bird should migrate along the east coast, only visiting the west side as a straggler. Mr. Robert Gray, who remarks this, writes (B. of W. of Scotl. p. 431) as follows:—"This interesting little bird is of irregular and uncertain occurrence only in the west of Scotland. So far as I can learn, not more than three or four specimens have, at any time, been met with in the Outer Hebrides. Mr. M'Donald procured two in North Uist in the winter of 1868-69. They were both found dead on the beach, having been cast up by the waves during a storm from the west, but were quite fresh, showing they had been in life a few hours previously. Similar *waifs* have been picked up at other places in rough weather; and many living, though exhausted, Little Auks have been scattered broadcast over the western mainland in the same accidental way. Thus in the winters of 1866-67 and 68 several were captured near Oban, and southwards as far as the Firth of Clyde other examples were obtained. The species has also been shot at Millport, in the Isle of Cumbrae, and on the banks of Loch Fyne, as I have been informed by Mr. William Hamilton, jun. Specimens of the bird have been found as far inland as Kilmarnock, in Ayrshire, on the

west coast, and in the heart of Lauderdale on the east. It is not a little singular that in migrating southwards this species should keep almost entirely to the east coast. In East Lothian, where for many years I had ample opportunities of watching its appearance, it is observed regularly every winter, coming near the shore, however, in stormy weather." So far as I can ascertain, there is no instance on record of this species having bred in Great Britain. It is true that Macgillivray stated that it bred on St. Abb's Head; but Mr. Robert Gray (*op. cit.* p. 433), referring to this statement, writes as follows:—"I have never seen the species there, although I have taken several journeys expressly for the purpose of looking for it. I have, however, seen at least two specimens in the month of June on the Bass Rock, where they were probably breeding. Mr. Macgillivray himself observed two on the same rock, so that it is likely a few pairs may remain with us during the breeding-season. As collateral evidence on this point it may be mentioned that Pennant, in his 'Tour in Scotland,' records having seen the species on the Farn Islands on the 15th July 1769, and also that the late Mr. Thompson, in his 'Birds of Ireland,' narrates that 'on 19th May 1849 Mr. Darragh, of the Belfast Museum, saw four Little Auks on Ailsa Craig; one of them remained on the water at the base of the craig until approached by the boat within about eighty yards, when it flew off in the direction which its three companions had taken a minute before.'" I may, however, here remark that I think there is scarcely any good ground for supposing that it has ever bred with us. Dr. Saxby says that a whole winter will sometimes pass without a Little Auk making its appearance; and he accounts for this by the fact that they only approach the coast now and again when driven in by hard weather, but are found at some distance out at sea all through the winter. It visits the coasts of Ireland, as it does those of England, as an occasional straggler during the winter season, and is said to be seldom numerous.

On the coasts of Greenland it is a very common species. According to Professor Newton it is said not to breed further south than 68° N. lat.; but though its great stations are in the northern parts of Baffin's Sea, it is stated not to be common in the Polar sea. It is also found in East Greenland. In Iceland it is said by Faber to be found all the year round; but it only breeds on Grimsey, where he found it in 1820, and Mr. Proctor in 1837.

Captain Feilden says that it is not an uncommon winter visitor to the Færoes, and is frequently picked up inland, being blown ashore by the violence of the winter gales. Müller noticed a single flock in Naalsoefjord on the 8th June 1857, the weather at the time being cold and windy. It is scarcely necessary to add that it does not breed on these islands. In Scandinavia it is also common in winter. Mr. Collett informs me that it does not breed in Norway, but visits all parts of the coast in the winter, from the Varanger fiord to the Swedish frontier, being met with sometimes in large numbers. It frequently penetrates far up the fjords, and is also found as a straggler on the rivers and lakes. In November and December it is common in the Christiania fjord, when the Razorbill and the two larger Guillemots are also found there. On the fjords of East Finmark it remains until April. There is a specimen in the Bergen Museum which was shot near that town in December 1869, and which has still much of the summer plumage remaining on it. It is not an uncommon visitant to the Swedish coasts. Professor Nilsson says that in the winter of 1830-31 numbers were seen on the coasts of Skåne, and the harbour of Ystad was covered with them. Towards the spring they disappeared; but

the next autumn a few were seen in different parts of Skåne, chiefly on rivers and lakes. It has been also shot on the Wenern, Mjösen, Wormen, &c.

According to Dr. Palmén it has been met with even in Central Lapland, and one was found in December 1865 in Pudasjärvi, starved and scarcely able to fly. A. von Nordmann says that it has been met with in the northern portions of the Gulf of Bothnia; and Professor Nylander records it from near Uleåborg, and in 1865 a young one not fully feathered was caught on the Kattilankalla coast, about three miles (Swedish) out at sea. Mr. Ridderstadh shot an immature bird at Christinestad in December 1852; another was shot in the parish of Nerpis on the 16th March 1858; an old bird was obtained on the 29th October 1864 at Melkö, near Helsingfors, by Mr. Brenner; and one was seen there again in the autumn of 1870. Furthermore, the Borgå fishermen assured Mr. Hintze that a small bird they called *Nirkki* was found in the outer fringe of islands, which appeared to be this species. I have no details as to its occurrences on the northern shores of Russia; but it is common off Novaya Zemlya and Spitsbergen. Mr. Gillett found it much more numerous in the north than in the south of Novaya Zemlya; and Dr. Th. von Heuglin remarks that he only met with it on the drift ice in the Gulf of Kara. Referring to its presence in Spitsbergen, Professor Newton writes (*Ibis*, 1865, p. 521) as follows:—"This pretty little bird is, as has been said, numerous almost beyond belief on the greater part of the coast. Parry's expedition met with it as far to the north as the party travelled, and on their return in August found it in great numbers between lat. 81° and 82° N. We did not see it in the Stor Fjord, nor did Dr. Malmgren. Its breeding-places, though at a less height than those of its allies, are still far from being easily accessible; but I have mentioned one to within a few feet of which I was able to climb and superintend the capture of the young." Dr. Malmgren says that he met with it below 73° N. lat., and that it gradually increased in numbers as they proceeded northwards, but was only numerous in 73°-76° N. lat., when they reached the drift ice. It was not common about Bear Island; and therefore he does not believe that it breeds there.

It occasionally visits the coasts of Germany during winter, but is only a rare straggler; but, according to Mr. Collin, it occurs annually on the coasts of Denmark in the autumn and winter—occasionally in large numbers, when driven down by the ice. It is, he says, not uncommon for them to come down the chimneys of dwelling-houses; and he received one in 1846 which had been obtained thus. It occasionally visits the coasts of Holland, and has, Professor Schlegel says, been seen there as early as the end of August; and Baron von Droste Hülshoff says that it usually appears in East Friesland after severe storms during the winter, being then not unfrequently cast up on the shore dead. The same may be said respecting its occurrence on the coasts of Belgium and France, where it is met with now and again. I do not find it recorded from Spain or Portugal; but Mr. Layard observed it off Cape Finisterre, and it ranges as far south in the Atlantic Ocean as the Azores and Canaries. Mr. Godman says that it is said to be more numerous in the eastern Canaries, though found occasionally throughout the group. He also includes it in his list of the birds of the Azores on the strength of a specimen in the collection of a gentleman in Terceira, which was killed in the island four or five years previous to his visit there. It has not, so far as I can ascertain, been found in the Mediterranean, nor on the African coast; and I do not find it recorded from the northern coasts of Siberia by the explorers who have visited that country. On the American continent it is common in the Arctic regions and on the north-east coasts, but has not been met with in Alaska or on the west coast.

Dr. Walker observed great numbers in Melville Bay, and obtained its eggs near Cape York; and Captain Feilden met with it in Baffin's Bay. It occurs all along the east coast of British North America; and I met with it in the Bay of Fundy during the winter. According to Dr. E. Coues it is found on the coasts of the United States as far south as New Jersey.

In habits the Little Auk resembles its allies the Razorbill and the Guillemots, being essentially a sea-bird, more so perhaps than any of those; for during the winter it is seldom seen near land, unless driven in by stress of weather, preferring the open ocean. It is said to dive with ease and constantly, but seldom remains long under the surface, nor does it traverse any great distance when diving. It is usually seen near drift-ice, on which numbers may be seen sitting, whilst others are diving in the immediate vicinity. It feeds on small crustacea, and probably also on small fish. It flies tolerably swiftly, and can traverse considerable distances on the wing. Malmgren says that it is very lively and active in its movements, and exceedingly noisy, continually uttering its note *trrr*, *trrr*, *tet*, *tet*, *tet*, *trrr*, especially when near its breeding-places, when each one appears to try and call louder than its neighbour. It breeds in rocky places, depositing a single egg in holes between the stones or in clefts of the rocks. Malmgren (J. f. O. 1865, p. 267) says, "the Little Auk breeds in great numbers in many parts of Spitsbergen. The best-known breeding-colony is on the mainland south-east of the Horn-Sound Island, in some steep piles of stones, consisting of smaller and larger boulders and pieces, which girdle the lower sides of the mountains at an altitude of 200–400 feet. When I visited this place, on the 1st August, the regular breeding-season was over; for the old and young birds swarmed about these stone-heaps, making a constant noise. However, we found a couple of much-incubated eggs. The female deposits a single egg in a hole or passage under the stones, so deep in that the foxes cannot readily get at it. In the inner portion of the Ice Fjord it breeds in many parts in vast numbers, in similar heaps of stones, sometimes as high up as 800 feet above the sea-level." Dr. Malmgren also says that the present species is frequently eaten and makes an excellent dish, roasted Little Auks and roast Reindeer being considered the greatest delicacies that are to be had in Spitsbergen.

I am indebted to Mr. A. Benzon and Mr. Erichsen, of Copenhagen, for a considerable series of eggs of the Little Auk from Egedesminde, in Greenland. These eggs are pale greenish blue, some almost white; and, as a rule, they are without markings, though some are tolerably profusely marked, chiefly at the larger end, with pale reddish spots. In size they vary from  $1\frac{3}{10}$  by  $1\frac{1}{10}$  to  $1\frac{3}{10}$  by  $1\frac{1}{10}$  inch.

The specimens figured are, in the foreground, the adult bird in summer plumage and the nestling, and in the background the adult in winter dress, all three being the specimens above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, *ad. ptil. æst.*, *b*, *ad. ptil. hiem.* Greenland (*Erichsen*). *c*, *ad.* Bay of Fundy, December (*G. A. Boardman*).

*E Mus. A. and E. Newton.*

*a*, *pull.* Safe Haven, Ice Sound, W. Spitsbergen, July 23rd, 1864 (*A. Newton*).



## Genus FRATERCULA.

*Fratercula*, Brisson, Orn. vi. p. 81 (1760).

*Alca* apud Linnæus, Syst. Nat. i. p. 211 (1766).

*Mormon* apud Illiger, Prodr. Mus., p. 283 (1811).

*Lunda* apud Pallas, Zoogr. Rosso-As. ii. p. 365 (1811).

*Larva* apud Vieillot, Analyse, p. 67 (1816).

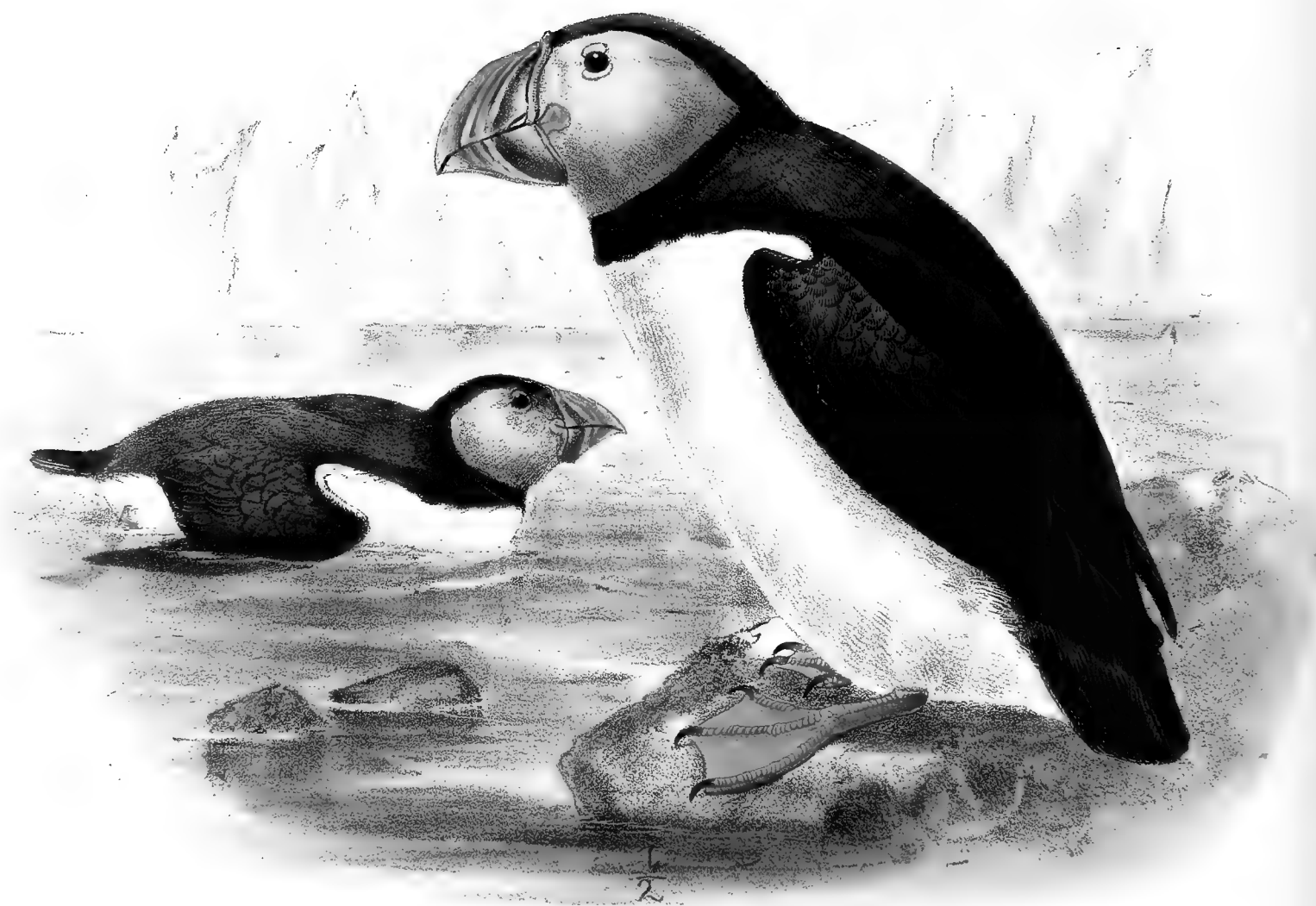
*Ceratoblepharum* apud Brandt, Bull. Acad. St. Pétersb. ii. p. 348 (1837).

THIS genus contains only four species, which inhabit the northern portions of the Palæarctic and Nearctic Regions, only one species being found in the Western Palæarctic Region. They frequent the ocean, being usually found far out at sea, except during the breeding-season, when they frequent rocky and rugged coasts. They fly swiftly, swim buoyantly and with ease, and dive extremely well, frequently remaining for some time below the surface. They feed on small fish, which they pursue and catch under water, and mollusca &c. They nest in burrows something like rabbit-burrows, usually breeding in tolerably large communities. Their single, dull white, rough-surfaced egg is placed in an oven-shaped hole at the end of the burrow; and not unfrequently the burrows communicate; and then the oven-shaped nest excavation is scooped out in the side of the burrow.

*Fratercula arctica*, the type of the genus, has the beak about as long as the head, stout, much higher than broad, vertically expanded, obliquely furrowed on the sides, curved to the tip, which is narrow and blunt; nostrils basal, linear, marginal; wings short, narrow, curved, pointed; tail short, slightly rounded; legs very short, placed far behind; tibia bare for a very short distance, tarsus stout, anteriorly scutellate; hind toe wanting; anterior toes moderate, connected by webs, the inner toe much shorter than the outer one, which is nearly as long as the centre toe; claws moderate, slightly curved, compressed, pointed.







J.G. Keulemans del

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NORTHERN PUFFIN.  
FRATERCULA GLACIALIS

## FRATERCULA ARCTICA.

(PUFFIN.)

- Fratercula*, Briss. Orn. vi. p. 81 (1760).  
*Alca arctica*, Linn. Syst. Nat. i. p. 211 (1766).  
*Le Macareux*, Buff. Hist. Nat. Ois. ix. p. 358, pl. xxvi. (1783).  
*Labrador Auk*, Lath. Syn. iii. pt. 1, p. 318 (1785).  
*Alca labradorica*, Gmel. Syst. Nat. i. p. 550 (1788).  
*Alca labradora*, Lath. Ind. Orn. ii. p. 793. no. 4 (1790).  
*Alca canagularis*, Meyer, Taschenb. deutsch. Vogelk. ii. p. 442 (1810).  
*Mormon*, Illiger (*Alca arctica*, Linn.), Prodrum, p. 283 (1811).  
*Lunda arctica* (L.), Pall. Zoogr. Rosso-As. ii. p. 365 (1811).  
*Mormon fratercula*, Temm. Man. d'Orn. p. 614 (1815).  
*Fratercula arctica* (L.), Leach, Syst. Cat. M. & B. Brit. Mus. p. 42 (1816).  
 " *Mormon glacialis*, Leach," J. F. Naumann, Isis, 1821, p. 782, pl. 7. fig. 2.  
*Mormon arctica* (L.), J. F. Naumann, Isis, 1821, p. 783, pl. 7. figs. 5, 6, 7.  
*Fratercula glacialis* (Leach), Steph. in Shaw's Gen. Zool. xiii. pt. i. p. 40, pl. 4. fig. 2 (1825).  
*Mormon polaris*, C. L. Brehm, Vög. Deutschl. p. 999 (1831).  
*Mormon grabæ*, C. L. Brehm, ut suprâ (1831).  
*Fratercula (Ceratoblepharum) arctica* (L.), Brandt, Bull. Ac. St.-Pétersb. ii. p. 348 (1837).  
*Mormon arcticus* (L.), Macgill. Man. Brit. Orn. ii. p. 218 (1842).  
*Fratercula corniculata*, Degl. & Gerbe, Orn. Eur. ii. p. 609 (1867, nec Naum.).
- Puffin*, Coulterneb, English; *Fachach*, *Seumas-ruadh*, Gaelic; *Macareux*, French; *Papagaio do mar*, Portuguese; *Polcinella di mare*, Italian; *arktischer Lund*, *nordischer Larventauher*, German; *Seepapagei*, Dutch; *Sö-Papagöie*, Danish; *Lundi*, Færoese; *Killingak*, Greenlandic; *Lunði*, Icelandic; *Lundefugl*, Norwegian; *Lunnefogel*, Swedish.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 275; Werner, Atlas, *Palmipèdes*, pl. 72; Kjærb. Orn. Dan. taf. 53, Suppl. taf. 35; Naumann, Vög. Deutschl. taf. 335; Sundevall, Svensk. Fogl. pl. 52. fig. 1; Gould, B. of Eur. pl. 403; id. B. of G. Brit. v. pl. 51; Schlegel, Vog. Nederl. pl. 260; Audub. B. of Am. oct. ed. pl. 464; Newton, Ibis, 1865, pl. 6.

*Ad.* pileo nigro vix fusco tincto: capitis lateribus, mento et gulâ cinereis: collo postico, torque collari et corpore suprâ nigris, hâc purpureo nitente: corpore subtùs albo: rostro livido-cæruleo, aurantiaco fasciato, et ad basin viridi colorato: iride fusco-cinereâ, carunculâ supra et sub oculis plumbeo-cæruleâ: pedibus aurantiacis.

*Juv.* rostro minore et sordidiore, capitis lateribus saturationibus, et regione anteoculari fuliginoso-nigrâ: pedibus sordidè aurantiaco-flavidis.

*Adult Male* (Greenland). Crown black with a brownish tinge; space above the eye, sides of the head, chin, and upper throat ashy grey; entire neck narrowing to a narrow band in front, back and upper parts generally, including the wings and tail, deep black, the upper parts glossed with purple; underparts below the black collar pure white; bill richly coloured, the general colour being livid purplish blue, the upper ridge and those crossing the bill orange or orange-red, the flesh part round the gape orange, and the ridge at the base of the bill of a greenish tinge; iris brownish grey, in very old birds becoming pearl-white, the fleshy patch above and below the eye lead-blue; legs bright orange. Total length about 11·5 inches, gape 1·55, height of bill at the base 1·5, wing 6·7, tail 2·0, tarsus 1·15.

*Adult Female*. Resembles the male, but is a trifle smaller, and has a smaller bill.

*Young* (Tangier). Differs from the adult in having the bill smaller and not so high; the sides of the head are much deeper grey in colour; and the entire space in front of and above and below the eye is sooty black; legs dull orange-yellow; iris brown; bill much less richly coloured than in the adult.

*Young in down* (Stappen, North Cape). Covered with soft long down, sooty blackish brown in colour, except on the abdomen, where it is white; head and neck rather blacker than the rest of the plumage.

THE present species inhabits the northern portions of Europe and the Atlantic coasts of North America, being replaced on the Pacific side of that continent by a tolerably closely allied species, *Mormon corniculata*, Naum. It breeds in Europe as far south as the coasts of France, and straggles in winter down to the shores of North Africa. In Great Britain it is tolerably common all round the coasts, breeding in suitable localities, but is much less numerous in the south than it is in the north. It is only found inshore during the nesting-season, appearing in April, and in August it departs again for the ocean; but some few may at times be seen near the coast at all seasons of the year. Yarrell enumerates the following breeding-stations as inhabited by this species, viz.:—the Isle of Man; the coast of Anglesey; the Scilly Islands, where it is more common than in Cornwall; the high cliffs of the Isle of Wight, between the Needle rocks and Freshwater Gate; the Yorkshire coast; the Farn Islands; Puffin Island, in the Frith of Forth, and others of the numerous Scottish islands. In many parts its numbers have greatly decreased; and though it still breeds in the Isle of Wight, it only does so in small numbers. According to Montagu it used formerly to breed in the cliffs of Dover, but has not done so for many years. On the east coast it does not breed, owing to the want of suitable localities, further south than the Yorkshire coast, where, Mr. Cordeaux writes (B. of Humb. Distr. p. 157), it “nests annually in immense numbers on the Flamborough rocks. The Puffins do not arrive at their breeding-haunts until after the Guillemot, Razor-billed Auks, and Kittiwake Gulls. I have rarely met with any off the rocks before the middle of April, the main body not arriving, as a rule, at their nesting-stations before the first week in May, and commencing laying about the end of that month. Mr. Baily, of Flamborough, says that he has occasionally met with Puffins off the cliffs in February. The fact is, as our fisherman told me, some Puffins may be found far from land in the North Sea throughout winter. In long-continued storms, like other sea-birds, they come nearer the coast, and are then sometimes killed within the Humber.” Mr. Hancock says that in Northumberland and Durham it is “a resident, frequent on the coast all the year. It breeds on the Farne Islands. In the first week in June 1851, in company with Mr. W. C. Hewitson and

my brother Albany, we met with it breeding there, but in no great numbers. I was informed by the late Mr. Joseph Watson, jun., and Mr. Isaac Clark, who visited the island in 1870, that there was a colony of considerable size, and they saw great numbers of the birds swimming about in all directions." On the coasts of Scotland it appears to be much more numerous than in England, and is, Mr. Robert Gray writes (*B. of W. of Scotl.* p. 433), "perhaps the most abundant species of sea-fowl to be met with in the west of Scotland, some of the breeding-places being literally overstocked with it. Its haunts are numerously distributed from Barra Head to the Butt of Lewis on the one hand, and from Cape Wrath to the Scaur Rocks, in the Bay of Luce, on the other. Westwards of the Long Island it is found on the Hannan Islands, the Haskeir Rocks, and St. Kilda, the last-mentioned locality being frequented by countless numbers during the height of the breeding-season. In the Minch, the chief breeding-place is on the Shiant Isles; and considerable numbers also incubate on the Ascrib Islands and other rocky islets off the coast of Skye. Another important station is at the Mull of Oe, in Islay; but in point of interest it falls greatly short of Ailsa Craig, which may be said to rank next to Mingalay, Berneray (Barra Head), and St. Kilda as a crowded bird-hive." In Ireland it breeds, in suitable localities, all round the coast, and is a common species.

It is said not to be very numerous in Greenland; and Holböll states that it does not breed further south than  $63^{\circ} 30'$  N. lat.—which appears somewhat curious, if correct. Professor Newton says that it is very common in Iceland, and breeds in numerous localities around the coast. At the beginning of October they betake themselves to the open sea, returning to their nesting-quarters at the beginning of May. Captain Feilden says that it is the most abundant of all the rock-birds visiting the Færoes, appearing, in mild seasons, about the end of March, but more frequently during the first week in April.

Mr. Collett informs me that in Norway it breeds in large colonies on various parts of the coast, most numerous above the arctic circle. In Lofoten and on the coasts of Tromsö and Finmark the colonies are the largest; and the number of individuals in some of them is enormous. South of the arctic circle the colonies are more scattered, and are smaller; but there are breeding-places occupied by these birds at Stadt, in Bergen Stift, and on some of the islands off Stavanger, in  $59^{\circ}$  N. lat. In the winter it is common all along the coast, and young birds are to be met with up the southern fiords. Late in June all the breeding females have deposited their eggs; and in some of the colonies the young are hatched then. Nilsson says that Von Wright found about a dozen pair breeding off Bohuslän, on the Wäderöar; but up the Baltic it does not seem to occur. Dr. Palmén says (*Finl. Fogl.* ii. p. 676) that Von Middendorff met with it on the Ainowska Islands, west of Ribatschi, but no further; Lilljeborg met with it numerous in July 1848 at Schuretskaja, but it is not known to breed in the White Sea. Fellman says that it occasionally straggles to Utsjoki; Grape records it once from the parish of Enontekis; and a young male was killed in January 1855 at Puumala, on the northern portion of the Saimen. Mr. G. Gillett and Dr. Th. von Heuglin both met with it in Novaya Zemlya, where, the former states, it is not very common; and it is found in Spitzbergen, but is there also not very numerous. It is here that the largest form is found; and Professor Newton, basing his opinion on an examination of examples obtained by him there, was led to believe in the specific difference of the Spitzbergen bird. It is, he writes (*Ibis*, 1865, p. 523), "the least common of the *Alcidæ*

in the Spitsbergen waters. Indeed, when the extraordinary abundance of at least two of the other species [*Mergulus alle* and *Alca bruennichi*] is taken into account, it may almost be called rare. Ross, however, couples it with the last in his statement that it was found in considerable numbers on Walden and Little Table Islands; but, on the other hand, Dr. Malmgren says that this was not the case according to his experience. He saw several examples at the beginning of September near Norway and Amsterdam Islands; and in June some were shot in Treurenberg Bay. In his last voyage he also found Puffins at Bear Island, but in no great numbers. We observed them several times at a considerable distance from land; but they were most plentiful, as I have said, about Sassen Bay, some thirty or forty miles from the open sea. Dr. Malmgren states that he can see no difference between specimens from Spitsbergen and others from Iceland and Finmark, but that examples killed near Gottenburg and in the Færoes are decidedly smaller and have lower bills. These, no doubt, are identical with our British Puffins."

The Puffin very rarely enters the Baltic. It occurs in winter off Heligoland, but has not bred there for the last forty years; and it occasionally visits the south coasts of the German Ocean. Collin says that it very rarely occurs in Denmark; a young bird was caught at Helsingör; Mechlenburg obtained specimens on the 20th October, 1831, and the 10th January, 1849, from near Flensburg; there are two specimens from Holstein in the Copenhagen Museum; one was found dead on the shore at Blokhuse on the 11th March, 1858; a week later another was caught alive at the same place; and on the 23rd of the same month Mr. Schjöning obtained three there; Mr. Juel got one at Lönstrup on the 20th January, 1863; Mr. C. Bjerring informed Mr. Collin that he saw a young one which was shot near Hvidding in 1853; one was caught alive on the Glatved coast on the 23rd December, 1874; and one was cast up dead some years ago at Nordfeldt, on Möen. It is only an accidental visitant to the shores of Holland and Belgium; but it is common on the north and west coasts of France; many breed on the rocks and islands of Brittany and at the Aiguilles d'Étretat. In the Mediterranean it is principally seen in the spring and autumn; but MM. Jaubert and Barthélemy-Lapommeraye, having sometimes met with it there in July, are inclined to infer that it must breed on some of the small unfrequented islands. It is said to be common on the coast of Portugal; and Mr. Howard Saunders informs me that on or about the 8th June 1868 he observed large numbers in the vicinity of the rocky Berlengas Islands, off the mouth of the Tagus; and he therefore supposes that it breeds there: if it does, this is the southern limit of its breeding-range. It is found, though not numerous, on the coasts of Spain. Colonel Irby says he has seen individuals in Gibraltar Bay as late as the 5th March, but, as a rule, it is a rarer bird than the Gannet or even the Razorbill.

On the Italian coasts it is said to be of rare, and in Sicily of altogether exceptional, occurrence; it is also a rare visitant to the island of Sardinia, a young specimen being described by Salvadori under the name of *F. glacialis*. Mr. Howard Saunders, however, informs me that at some distance from the shore it is not uncommon in winter, but, as the weather is seldom so boisterous as in the northern seas, it is not so often driven upon the coasts, and does not so often come under the notice of the Italian naturalists. Mr. C. A. Wright includes it in his list of the birds of Malta and Gozo on the authority of Schembri, who mentions the capture of a single specimen in November 1832. I do not find any record of its occurrence on the coasts of the Eastern Mediterranean; but it is found off the north-western coasts of Africa. Loche states that

it visits the coasts of Algeria in winter; and Favier says that it is found near Tangier from November to March, and sometimes even as late as April or May, and is more often met with than the Gannet, and frequently picked up dead on the sea-shore after stormy weather.

On the American coast the Puffin is very abundant on the coasts and islands of the North Atlantic, and breeds numerously off the coast of Labrador and in the Bay of Fundy. In winter it is met with south to Massachusetts. It appears doubtful if it occurs on the Pacific side; or, if it does, it is exceedingly rare. The species which there replaces it is *Fratercula corniculata* (Naum. Isis, 1821, p. 782, taf. 7. figs. 3, 4), which differs from the larger-billed form of the present species in having a slender upright horn on the upper eyelid; and the black on the throat extends to the bill.

Many competent authorities have decided to separate the present species into two, and give specific rank to the northern form on account of its larger size, separating it under the name of *Fratercula glacialis*. In this view, however, I am unable to concur. I have carefully measured all the specimens I have had for examination, and find that the variation in size of adult birds is as follows:—Great Britain, wing 6·15 to 6·5 inches, greatest height of bill 1·2 to 1·35; Norway, wing 6·8, bill 1·42; Iceland, wing 6·62, bill 1·4; Greenland, wing 6·7, bill 1·5; Labrador, wing 6·76, bill 1·55; Spitzbergen, wing 6·9 to 7·2, bill 1·4 to 1·55 inch.

From this it will be seen that the specimens found further south are the smallest, those from Spitzbergen being the largest in size, but that there is a considerable variation in size in specimens from the same locality, which renders it impossible to draw a line of separation between the largest and the smallest form; and it is therefore, I consider, unadvisable to separate them into two species.

The Puffin is essentially a bird of the ocean, and lives out at some distance from the shore, except during the breeding-season, when it betakes itself to the rugged portions of the coast. It swims swiftly and buoyantly, sitting very lightly on the water, and flies with tolerable swiftness. Like the Razorbill and Guillemots, it dives exceedingly well, and moves about as if flying under the surface of the water in pursuit of small fishes, and will even at considerable depths dive to the bottom in search of mollusca. It arrives at its breeding-haunts, which are usually large cliffs overhanging the sea, early in April, and is very regular in its appearance. Dr. Saxby states, "It is generally believed in the island of Unst that the Puffins have an almost preternatural faculty for timing their movements according to the calendar, the whole body of them departing on a given day in each year with the regularity of clockwork. Without going quite so far as this, I cannot but admit that the birds do leave with most notable punctuality, the 23rd day of August being almost always the marked day of the migration. Thomas Edmonston also gives this date, saying that the Puffin generally arrives about the 1st April, and departs constantly on the 23rd of August. It need scarcely be remarked that a few stragglers are left to bring up the rear. A flock may now and then be seen as late as the first week in September; but such an occurrence is very unusual; and it is very rarely indeed that a Puffin is seen with us in the winter. As a rule the birds arrive in the last week in March, and begin laying about the third week in May, this being perhaps a little early on an average." The localities selected for nidification are usually lofty cliffs or rocks on the coast, or tolerably high turf-covered tableland; and its nests are either.

in burrows dug-out in the ground by the bird itself or crevices in the rocks; and only a single egg is deposited by each female. Sometimes two females inhabit the same burrow. When the young bird is hatched, it is well supplied by both parents with food, and does not quit the nest until it is full-grown. The young are fed on small fish, chiefly the fry of the coal fish (*Gadus carbonarius*), of which several together are carried in the bill of the old bird.

In some parts of the coast considerable numbers are killed during the breeding-season; and on the island of St. Kilda it forms the chief article of food with the natives during the summer months, being usually cooked by roasting among the ashes. Macgillivray says that it "is taken by the fowlers in two ways:—when on its nest, by introducing the hand and dragging out the bird, at the risk of a severe bite; and when sitting on the rocks, by means of a noose of horse-hair attached to a slender rod, generally formed of bamboo cane (procured probably from some wreck). The latter mode of fowling is most successful in wet weather, as the Puffins then sit best upon the rocks, allowing a person to approach within a few yards; and as many as three hundred may be taken in the course of the day by an expert bird-catcher."

Macgillivray gives (Brit. B. v. p. 371) some excellent notes from Audubon respecting the nidification of the Puffin on the coast of Labrador, which I transcribe as follows:—"There is on the coast of Labrador a small island, known to all cod-fishers, and celebrated for the number of Puffins that annually breed there. As we rowed towards it, although we found the water literally covered with thousands of these birds, the number that flew over and around the green island seemed much greater, insomuch that one might have imagined half the Puffins in the world had assembled there. This far-famed isle is of considerable extent; its shores are guarded by numberless blocks of rocks; and within a few yards of it the water is several fathoms in depth. The ground rises in the form of an amphitheatre to the height of about seventy feet, the greatest length being from north to south, and its southern extremity fronting the Streight of Belleisle. For every burrow in the island previously visited by us there seemed to be a hundred here; on every crag or stone stood a Puffin; at the entrance of each hole another; and yet the sea was covered and the air filled by them. I had two double-barrelled guns and two sailors to assist me; and I shot for one hour by my watch, always firing at a single bird on wing. How many Puffins I killed in that time I take the liberty of leaving you to guess.

"The burrows were all inhabited by young birds, of different ages and sizes; and clouds of Puffins flew over our heads, each individual holding a 'lint' by the head. This fish, which measures four or five inches in length, and is of a very slender form, with a beautiful silvery hue, existed in vast shoals in the deep water around the island. The speed with which the birds flew made the fish incline by the side of their neck. While flying the Puffins emitted a loud croaking noise; but they never dropped the fish, and many of them, when brought down by a shot, still held their prey fast. I observed with concern the extraordinary affection manifested by these birds towards each other; for whenever one fell dead or wounded on the water, its mate or a stranger immediately alighted by its side, swam round it, pushed it with its bill as if to urge it to fly or dive, and seldom would leave it until an oar was raised to knock it on the head, when at last, aware of the danger, it would plunge below in an instant. Those which fell wounded, immediately ran with speed to some hole and dived into it, on which no further effort was made

to secure them. Those which happened to be caught alive in the hand bit most severely, and scratched with their claws at such a rate that we were glad to let them escape.

"The burrows here communicated in various ways with each other, so that the whole island was perforated as if by a multitude of subterranean labyrinths, over which one could not run without the risk of falling at every step. The voices of the young sounded beneath our feet like voices from the grave; and the stench was extremely disagreeable; so that as soon as our boats were filled with birds we were glad to get away. During the whole of our visit the birds never left the place, but constantly attended to their avocations. Here one would rise beneath our feet; there, within a few yards of us, another would alight with a fish, and dive into its burrow, or feed the young that stood waiting at the entrance. The young birds were far from being friendly towards each other; and those which we carried with us kept continually fighting so long as we kept them alive. They used their yet extremely small bills with great courage and pertinacity; and their cries resembled the wailings of young whelps. The smaller individuals were fed by the parents by regurgitation, or receiving small pieces of fish which were placed in their mouth; the larger picked up the pieces of fish that were dropped before them; but almost all of them seemed to crawl to the entrance of the hole for the purpose of being fed. In all the burrows that communicated with others a round place was scooped out on one side of the avenue in the form of an oven, while in those which were single this oven-like place was found at the end, and was larger than the corridor. All the passages were flattish above, and rounded beneath, as well as on the sides. In many instances we found two birds sitting, each on its own egg, in the same hole."

The egg of the Puffin is white and has a dull, somewhat rough, surface; occasionally one finds eggs marked with brown; and I possess several, selected out of a series, which have a wreath of light brown hieroglyphic markings round the larger end, and one with a large dark brown spot or two. In size those in my collection vary from  $2\frac{1}{4} \times \frac{3}{4}$  by  $1\frac{2}{4} \times \frac{7}{4}$  to  $2\frac{2}{4} \times \frac{9}{4}$  by  $1\frac{2}{4} \times \frac{7}{4}$  and  $2\frac{2}{4} \times \frac{4}{4}$  by  $1\frac{3}{4} \times \frac{1}{4}$  inch.

The specimens figured are examples from Greenland and Norway, in my own collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

- a.* Barra Head, June 15th, 1868 (*H. J. Elwes*). *b.* Orkney (*Dunn*). *c*, ♂, *d*, ♀. Orkney, August 22nd, 1872 (*Dunn*). *e.* Nordland, Norway (*R. Collett*). *f*, ♂. Greenland (*Erichsen*). *g*, juv. Tangier (*Olcese*). *h*, pull. Stappen, North Cape, June 26th, 1872 (*R. Collett*).

*E Mus. Cantabr.*

- a*, ♂. Ice Sound, W. Spitzbergen, July 13th, 1862 (*A. Newton*). *b*, *c*. Spitzbergen (*A. N.*). *d*. No locality.

*E Mus. H. B. Tristram.*

- a.* Orkneys (*Dunn*). *b*, ♂. Bamborough, Northumberland, April 25th, 1866 (*J. H. Gurney, jun.*). *c.* Grimsey Island. *d.* Spitzbergen?

*E Mus. Reeks.*

*a.* Labrador (*H. F. Möschler*).

*E Mus. J. F. Hamilton.*

*a, juv.* Pagham, Sussex, January 6th, 1862.

## Order VIII. PYGOPODES.

### Family COLYMBIDÆ.

#### Genus COLYMBUS.

*Mergus* apud Brisson, Orn. vi. p. 105 (1760).

*Colymbus*, Linnæus, Syst. Nat. i. p. 221 (1766).

*Eudytes* apud Illiger, Prodromus, p. 282 (1811).

*Cepphus* apud Pallas, Zoogr. Rosso-As. ii. p. 340 (1811).

*Eudites* apud Kaup, Natürl. Syst. p. 144 (1829).

THIS genus contains only four species, three of which inhabit the northern portions of the Palearctic and Nearctic Regions, the fourth, *Colymbus adamsi*, G. R. Gray, being found only in North-western America and on the eastern coasts of Asia. These birds frequent larger and smaller lakes, rivers, and the sea-shores, being usually found near the coast, and not far out at sea. They walk with difficulty, usually shuffling along or sliding on the ground, and seldom go far from the water's edge; but they swim with ease and grace, and dive with the greatest facility, traversing long distances below the surface. They take wing unwillingly; but when once on the wing they fly swiftly, and usually at a considerable altitude. Their cry is loud and weird, and is uttered both when the bird is swimming and when it is flying. They feed on fish, which they pursue and catch by diving. They nest close to the water's edge, their nest being merely a little grass or aquatic herbage collected together in a depression in the soil; and their eggs, two (or sometimes three) in number, are olivaceous brown or olivaceous green, blotched with blackish brown.

*Colymbus arcticus*, the type of the genus, has the bill about as long or rather longer than the head, straight, slender, tapering to a sharp point; nostrils small, linear, subbasal, pervious; wings short, narrow, the first primary longest; tail very short, rounded; legs short, placed far behind; the tibia feathered almost to the joint, the tarsus short, much compressed, edged before and behind, covered with subhexagonal scales; hind toe very small, elevated, connected with the second by a partially free and lobiform membrane; anterior toes long, connected by a membrane, the outer toe longest; claws small, depressed, rounded at the end.







W. A. S. 1891

GREAT NORTHERN DIVER.  
COLYMBUS GLACIALIS.

J. G. Keulemans del.

## COLYMBUS GLACIALIS.

(GREAT NORTHERN DIVER.)

- Mergus major*, Brisson, Orn. vi. p. 105, pl. x. fig. 1 (1760).  
*Mergus major nævius*, Briss. tom. cit. p. 120, pl. xi. fig. 2 (1760).  
*Colymbus torquatus*, Brünn. Orn. Bor. p. 41. no. 134 (1764).  
*Colymbus glacialis*, Linn. Syst. Nat. i. p. 221 (1766).  
*Colymbus immer*, Linn. Syst. Nat. i. p. 222 (1766).  
*Le Grand Plongeon*, Buff. Hist. Nat. Ois. viii. p. 251 (1781).  
*Colymbus atrogularis*, Meyer, Taschenb. deutsch. Vogelk. ii. p. 449 (1810, partim).  
*Eudytes glacialis* (L.), Illig. Prodr. p. 283 (1811).  
*Cepphus torquatus*, Pall. Zoogr. Rosso-As. ii. p. 340 (1811, ex Brünn.).  
*Eudites*, Kaup (*Colymbus glacialis*, L.), Natürl. Syst. p. 144 (1829).  
*Colymbus maximus*, C. L. Brehm, Vög. Deutschl. p. 971 (1831).  
*Colymbus hiemalis*, C. L. Brehm, op. cit. p. 972 (1831).  
*Colymbus torquatus*, Keys. & Blas. Wirbelth. Eur. p. 91 (1840, ex Brünn.).  
*Eudytes glacialis* (L.), J. F. Naumann, Vög. Deutschl. xii. p. 397 (1844).

*Bun-bhuachail*, *Mur-bhuachaille*, Gaelic; *Plongeon-imbrim*, French; *Strolaga maggiore*, Italian; *Eis-Seetaucher*, *Imbergans*, German; *de Ijsduiker*, Dutch; *Islom*, *Storlom*, Danish; *Havgaas*, Færoese; *Tudlik*, Greenlandic; *Himbrimi*, *Brúsi*, Icelandic; *Havimmer*, *Islom*, Norwegian; *Islom*, Swedish; *Morskaya-Gagára*, Russian.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 952; Werner, Atlas, *Palmipèdes*, pl. 67; Kjærb. Orn. Dan. taf. 51 B, Suppl. taf. 34; Fritsch, Vög. Eur. taf. 60. figs. 4, 5; Naumann, Vög. Deutschl. taf. 327; Sundevall, Svensk. Fogl. pl. 53. fig. 4; Gould, B. of Eur. pl. 393; id. B. of G. Brit. v. pl. 43; Schlegel, Vog. Nederl. pl. 266; Audub. B. of Am. pl. 476; Wilson, Am. Orn. pl. 74. fig. 3.

♂ *ad.* capite et collo nigris viridi-purpureo et cæruleo nitentibus: gulâ maculâ semilunari albâ nigro striatâ notatâ et jugulo ferè lineâ magnâ albâ nigro striatâ circumcincto: corpore suprâ nitidè nigro, maculis rotundatis albis notato: remigibus et rectricibus nigricantibus: corpore subtùs albo, pectoris lateribus nigro striatis, et hypochondriis nigris albo maculatis: rostro et pedibus nigris: iride rufescente.

*Juv.* pileo, nuchâ et corpore suprâ fusco-nigris, dorsi plumis pallidiore marginatis: tectricibus alarum vix albo maculatis: mento, collo antico et corpore subtùs albis: rostro albido, culmine fusco: pedibus extùs nigris, intùs griseo-albis: iride fuscâ.

*Adult Male* (Calais, Maine). Head and neck glossy black, the crown, face, and a line down the hind neck glossed with purple, the rest with steel-blue; on the upper throat a transverse band formed of white

stripes, below which another broad band of white stripes goes almost round the neck, being only narrowly interrupted in front and behind; upper parts generally black, glossed with steel-blue and purple, and closely spotted with broad, irregular oval white spots; quills and tail blackish; underparts white, the sides of the lower throat and upper breast striped with purplish black, the flanks purplish black spotted with white; a dark band crosses the crissum; and the under tail-coverts next to the tail are blackish tipped with white; bill blackish horn, the edge of the mandibles and tip of the bill light bluish horn; iris rich reddish; legs blackish, though lighter on the inner side. Total length about 32 inches, culmen 4·4, wing 15·8, tail 3·2, tarsus 3·6.

*Adult Female* (Point Lepreaux, New Brunswick). Resembles the male, but is smaller, measuring—culmen 3·5, wing 13·5, tail 3·2, tarsus 3·2.

*Young*. Crown, nape, and upper parts dull brownish black, some of the feathers with light edgings, and a few white spots just appearing on the scapulars and wing-coverts; quills blackish, the inner webs brownish; tail with grey tips; chin, throat, and underparts white; bill white, with the exception of a dark mark down the upper ridge, extending almost to the point; inside of mouth dirty white; eye warm olive-brown; legs black outside and white inside, with light-grey edges; toes black, webs white, with the veins showing very plain down the centre.

THIS, the largest of the genus *Colymbus* which inhabits the Palæarctic Region, is nearly circum-polar in its range; for it inhabits the whole of Northern Europe, Asia, and America, in suitable localities, except that in North-west America it is replaced by a very closely allied form, *Colymbus adamsi*. In the winter season it straggles as far south in the Palæarctic Region as to the Mediterranean, and in America as far down as Texas.

In Great Britain it is a straggler to most parts of our coasts in the autumn and winter; but though it has been stated to breed in Scotland, I can find no clear evidence to show that such is the case. As a rule, immature examples are seen, and but seldom birds in fully adult dress, though these latter have been recorded from most parts of the coasts of Great Britain. It is by no means of unfrequent occurrence in the south of England; for I have seen many examples which have been shot off the south coast, and, according to Mr. Cecil Smith (B. of Guernsey, p. 173), it is a common autumn and winter visitant to the Channel Islands, arriving late in October or early in November. There is, he adds, one Guernsey-killed specimen in nearly perfect breeding-dress; but there is no reason to believe that it ever remains to breed there. It occurs regularly all along the east coast, and in the Humber district is found, Mr. Cordeaux states (B. of Humb. Distr. p. 181), "every autumn and winter off our shores, generally birds in the immature and winter plumage. The adult in the breeding-dress is far less commonly met with. This fine species is well known to our fishermen as the Herring-Loon; they keep principally to the open sea, but in very severe weather come occasionally within the river; and several instances are recorded of their capture far inland." Mr. Hancock says that it is somewhat rare off the coasts of Northumberland and Durham; and he adds that he possesses a specimen shot as late as the 22nd of May.

"In the west of Scotland," Mr. Robert Gray writes (B. of W. of Scotl. p. 411), "this splendid Diver is a very common species, being widely distributed from the Mull of Galloway to Cape Wrath in the north of Sutherlandshire. In the Outer Hebrides it is also very abundant; and, as a rule, it is found there at all seasons of the year, except during the month of July.

Early in the summer they begin to collect along the shores of Lewis, Harris, North Uist, Benbecula, and, indeed, the whole of the Long Island, where they linger until the beginning of June, some remaining even as late as the middle of the month. A few remain in Benbecula all the summer; the nest, however, has never been found. They return some time in August, and are seen in groups of fifteen or twenty birds, swimming near the shore immediately on their arrival. I observed a gathering of this kind on the west side of Benbecula on the 29th of August 1867, and was told by a friend residing there that he had seen them fully a fortnight before. All the birds were in brilliant summer plumage, and, as a group, formed a spectacle which is not often looked upon by even the most fortunate ornithologist. In many of the sounds and saltwater reaches of the inner islands, similar companies have been observed at the beginning of the season. Dr. Scouler has informed me that, in the course of a yachting cruise among these islands, he has seen from fifty to sixty Great Northern Divers, all in groups of six or eight birds, preparing to quit the coasts for their breeding-stations. Where these may be I am at a loss to conjecture. The absence of the birds extends through so short an interval as to preclude the idea of the journey being a lengthened one. In six weeks at most many of them are back to their old haunts, even as far south as the coasts of Ayrshire, where I have seen adult birds in August, accompanied by their young ones little larger than a Mallard. As the species is much later in spreading along the eastern shores of Scotland, it may be presumed that the Great Northern Divers of the western islands are hatched either in Iceland or on the north-eastern shores of Greenland. It is possible that Greenland birds may leave sooner than those bred in Iceland, as, on referring to Professor Newton's very interesting list of the birds of the latter country, it will be seen that mention is made of this Diver forming into parties on the sea in the end of August, and remaining off that coast during the winter. Although it has been at various times hinted that the species may have bred in this country, positive proof is yet wanting to set the question at rest." Dr. Saxby says:—"According to Messrs. Baikie and Heddle, the Great Northern Diver is common in Orkney at all seasons in its immature state, old birds being more abundant in winter; I have not, however, heard whether the belief entertained by those gentlemen, that it breeds there, has yet been confirmed. With us it arrives during the month of September in considerable numbers; but a large proportion disappear about Christmas. In April and May they again become plentiful; but among the few which remain throughout the summer adults are rarely seen. In the winter months a few at least are constantly to be seen in almost every voe or bay; but I have not observed more than a dozen at one time; and that was an unusually large number. The Immer frequents also the whole line of seaboard, feeding close along the face of the deep rocks, and, when the surf becomes too heavy for it there, going boldly seaward, or sometimes, if compelled by hunger, entering the voes. There it occasionally happens that the young coalfish have gathered in immense shoals; and in this case the Divers are in no hurry to return, continuing in the voe until the fish depart, and becoming so extremely fat as to be scarcely worth the trouble of preparing as specimens." Dr. Saxby believes that it occasionally breeds there; but his only reason for so doing is because he had some very large Diver's eggs sent to him; and this can scarcely be accepted as a valid reason, as eggs of *Colymbus arcticus* are occasionally found quite as large as those of the present species, and I have taken eggs of the Great Northern Diver which vary greatly in size.

It is said to be a regular visitant to the coasts of Ireland, remaining there from five to six months, and leaving in the spring; but Dr. Fleming mentions that he saw one off the coast of Waterford as late as July.

It is found in Iceland and Greenland, where it breeds regularly. Graah observed this bird on the east coast of Greenland, though it breeds generally on the west side, more frequently, however, in the south than in the north, where it is said to be rare. Professor Newton remarks that it is not uncommon in Iceland, where a pair or so may be found breeding on nearly every lake. They arrive in the north, according to Faber, the first week in May; and towards the end of August they begin to show themselves on the sea, where they remain during the winter. In the Færoes it is most frequently seen in spring and autumn, but is not known to breed there, though stragglers are seen along the coasts during summer. In Norway it is tolerably common. Mr. Collett informs me that it breeds on fresh water near the sea, from Söndmör up to within the Arctic circle, but not in East Finmark, where it is said to occur only in the autumn. In the autumn and winter it is seen on the northern and western coasts; and though it is rare below Lindesnæs, it occurs on the fjords in the south of Norway, and has even been met with far up the Christiania fjord. According to Nilsson it occurs on the southern coasts of Sweden in winter, but is not known to breed in that country, nor yet in Finland, where it is very rarely found; for there appears to be but one instance of its occurrence in Finland proper, a specimen having been shot early in the spring of 1832 at Maunu, in the Muonio elf.

In Northern Russia it is rather rare than otherwise. It is found in the White Sea; but I have never received a specimen from there. Mr. Seeböhm, however, heard from the natives of its occurrence on the Petchora. Mr. Sabanäeff says that it is rare in Central Russia, and he only once saw it near Moscow on passage; and in Poland, also, according to Taczanowski, it is seldom seen, and in the Warsaw Museum there is but one specimen, a young male, killed late in November 1876 near that town. It but seldom occurs off the North-German coasts in winter; and it is almost doubtful if it has ever really been obtained on the Baltic coast of that country. Ratzeburg says that one (an immature bird) was shot near Neustadt, Ew.; but it is possible that this was a Black-throated Diver. It visits the coasts of Denmark during winter, but, it would appear, is not very often obtained there. Collin says that one was shot near Elsinore in the winter of 1822; and it was procured at Krus Mölle near Aabenraa, on Moen, in March 1825 (where Hage has often seen it), at Gissselfeldt in January 1830, in the bay of Kiel, at Sæby, in Grenaa Harbour in the winter of 1847, in Flensborg fjord in November 1840, in Kiel Harbour in March; and Boie states that it has been shot on the Elbe coast of Holstein. It very rarely straggles far inland; but Count Hans von Berlepsch states (*J. f. O.* 1875, p. 105) that a fine young bird was shot on the Werra river near Gertenbach, in Hesse-Nassau, on the 28th November 1874. It is of occasional and irregular occurrence off the coasts of Holland and Belgium in winter, and has been seen on the inland lakes and on the Moselle. In France it is found on the northern coasts in autumn and winter, especially after rough weather; but on the shores of the Mediterranean it is very seldom seen, and only in immature dress. Professor Barboza du Bocage records it as being very rare in Portugal: and it may probably be found off the coast of Spain; but I do not find any record of a specimen having been procured.

In Southern Europe and the Mediterranean subregion it becomes very rare. In Savoy

immature birds visit the lakes almost every winter (and the same may be said respecting Italy), but adult birds are very seldom seen. Mr. A. B. Brooke says that there is an immature example in the Cagliari Museum which was obtained in Sardinia; but it does not appear to have been observed in Sicily. It is found in South Germany. Dr. Fritsch says that an old male was killed near Hrensko, Bohemia, and immature birds were exposed for sale in the Prague market in 1846. It has rarely occurred in Austria. Von Tschusi-Schmidhofen says that one was killed near Onavitz (Avra Comitatus) in November; and Messrs. Danford and Harvie-Brown state that a few visit Transylvania every winter. I do not find any record of its occurrence in Turkey; but Von Nordmann notices the appearance of two young birds near Odessa. Dr. Krüper does not include it in his list as occurring in Greece or Asia Minor; but Lord Lilford saw four Divers at Butrinto, which he thinks may have been Great Northern Divers, but could not procure one. Its occurrence on the southern side of the Mediterranean appears doubtful; for Von Heuglin and other authors on the ornithology of North-east Africa do not record its presence there; and Loche only states that specimens in immature dress have rarely been met with in Algeria. Vernon Harcourt, however, includes it in his list as having been met with at Madeira.

In Asia this Diver is found as far east as Japan. It has been met with on Novaya Zemlya. Dr. Finsch observed it numerous in Western Siberia; and Von Middendorff says that it nests, though rarely, on the Taimyr. It does not range down to India; nor does it seem to have been found in China, though it is said to occur in Japan.

The Great Northern Diver is very common in British North America and in the Northern United States; but it occurs in the Middle and Southern States only in winter. I found it breeding on several lakes in New Brunswick, and used to see it in some numbers on the coasts of the Bay of Fundy. Dr. Coues says that it is "generally dispersed in the United States in winter;" and Mr. Merriam (B. of Conn. p. 136) says that it is a tolerably common winter resident in Connecticut, arriving in October and leaving in April or May. According to Buell it has bred at East Hampton in that State. That it ranges tolerably far south appears certain, from the fact that when in Texas I had a specimen sent to me from Fort Stockton. In North-west America, according to the American authors, the present species is replaced by *Colymbus adamsi* (Gray, P. Z. S. 1859, p. 167), which in the immature dress cannot with certainty be distinguished from *Colymbus glacialis*, but which in adult plumage has a yellow bill, and the white spots on the upper parts are much larger.

In habits the Great Northern Diver assimilates closely to *Colymbus arcticus*. I have frequently seen it on the coasts of New Brunswick; and when living in that province on the Musquash I used, when summer logging on the large lakes of the Upper Musquash, to see these Loons almost daily. A pair bred every year on the Big Lake, and another pair on a smaller lake not far distant, besides which most of the larger lakes were tenanted by at least one pair of these magnificent birds. Without being very shy, they were sufficiently wary to keep well out of gunshot-range; and I could only get close enough to observe them well by hiding in the bushes near the shore, or on one of the small islands. I have tried to overtake them in a canoe; but they always succeeded in tiring us out after a long and unsuccessful chase. At night, when camping on the shores of the lake, their weird wailing cry sounded clear and loud over the water; and though to us, who were used to it, the sound was by no means so disagree-

able, I have known strangers, especially townsmen, who stayed in our camp for the fishing, to be kept awake most of the night by it; and one gentleman in particular used to compare it to a lot of demons let loose torturing children.

The Great Northern Diver flies swiftly, the flight being direct, and usually at a considerable altitude; but it appears to take wing unwillingly, and when pursued prefers to trust to its great powers of diving and swiftness in swimming. It dives extremely well, often remaining some time under the surface, and swims with great speed, the body being much submerged; and when alarmed it gradually sinks itself so deep in the water that the head and neck only are visible.

It feeds on small fish of various kinds, which it captures by diving; and on the coast it is said also to devour small crabs.

The nests I have seen were placed on small islands or masses of half-floating vegetable matter, tolerably close to the edge of the water, and consisted of a mass of grass and aquatic plants heaped together; and between the nest and the water there was a tolerably broad path or slide, along which the old bird crawled on its way to and from the water. When we approached the nest the female would shuffle off, usually in obedience to an alarm-note uttered by the male, and scramble down to the water, diving at once, and not emerging until she had traversed some distance, when she at once joined her mate. The eggs, two or three in number, are dull brownish olivaceous, blotched with blackish brown, and vary in size from  $3\frac{2}{40}$  by  $2\frac{8}{40}$  and  $3\frac{1}{40}$  by  $2\frac{11}{40}$  to  $3\frac{3}{40}$  by  $2\frac{1}{40}$  inches.

I have not included *Colymbus adamsi* as being specifically identical with the present species. Dr. Coues separates it only as a form or subspecies; but it appears to differ constantly in mature dress by having a light yellow bill, being bluer on the head and neck, and the white spots on the back are larger and longer than broad. I have, however, not had a series of specimens to compare, and therefore cannot speak from personal observation. I may here remark that Meyer (*l. c.*), under the name of *Colymbus atrogularis*, confuses the Great Northern and Black-throated Divers, his description of the adult bird being undoubtedly referable to the former species, whereas his description of the immature bird and his plate evidently refer to the adult of *Colymbus arcticus*.

The specimens figured are the old male and the young bird above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Calais, Maine (*G. A. Boardman*). *b*, ♀ *ad.* Menzies' Lake, New Brunswick, April 24th, 1862 (*H. E. D.*).  
*c*, *juv.* Point Lepreaux.

*E Mus. H. B. Tristram.*

*a*, *ad.* Norway.

*E Mus. H. Seebohm.*

*a*, ♂ *juv.* Hakodadi, Japan, January (*Blakiston*).





J. G. Keulemans del.

N. A. N. Hartert sculp.

BLACK THROATED DIVER.  
COLYMBUS ARCTICUS

## COLYMBUS ARCTICUS.

(BLACK-THROATED DIVER.)

- Mergus gutture nigro*, Briss. Orn. vi. p. 115 (1760).  
*Colymbus arcticus*, Linn. Syst. Nat. i. p. 221 (1766).  
*Colymbus ignotus*, Bechst. Gemeinn. Naturg. Deutschl. ii. p. 782 (1791).  
*Colymbus leucopus*, Bechst. Vög. Deutschl. iv. p. 625 (1809).  
*Cephus arcticus* (L.), Pall. Zoogr. Rosso-As. ii. p. 81 (1811).  
*Eudytes arcticus* (L.), Illiger, Prodr. p. 282 (1811).  
*Colymbus macrorhynchus*, C. L. Brehm, Vög. Deutschl. p. 974 (1831).  
*Colymbus balticus*, Hornsch. & Schill. Verz. Vög. Pomm. p. 21 (1837).  
*Colymbus megarhynchus*, C. L. Brehm, Vogelfang, p. 405 (1855).  
*Colymbus balthicus*, H. & S., C. L. Brehm, Vogelfang, p. 405 (1855).  
*Colymbus pacificus*, Lawr. B. N. Am. p. 889 (1858).

*Plongeon à gorge noire*, French; *Polartaucher*, *Polarlümme*, German; *Parelduiker*, Dutch;  
*Polar-Lom*, Danish; *Loumur*, Færoese; *Stor lom*, *Sortstrubet lom*, Norwegian; *Stor lom*,  
 Swedish; *Kuikka*, Finnish; *Gagara polosataya*, Russian.

*Figuræ notabiles.*

Edwards, Nat. Hist. B. pl. 146; D'Aubenton, Pl. Enl. 914; Werner, Atlas, *Palmipèdes*,  
 pl. 68; Kjærb. Orn. Dan. taf. 51 B; Naumann, Vög. Deutschl. taf. 328; Sundevall, Svensk.  
 Fogl. pl. 53. figs. 2, 3; Gould, B. of Eur. pl. 394; id. B. of G. Brit. v. pl. 44; Schlegel,  
 Vog. Nederl. pl. 267; Audub. B. of Am. pl. 477.

♂ *ad. ptil. æst.* pileo, nuchâ et collo postico cinereis, fronte saturatiore, capitis lateribus vix brunneo tinctis :  
 mento et gutture intensè nigris violaceo tinctis : gutturis lateribus nigro et albo striatis, gutture imo  
 magis striato, gulâ albo striatâ : corpore suprâ nigro, utrinque albo fasciato, his fasciis plagas duas  
 formantibus : rectricibus et remigibus nigris : tectricibus alarum superioribus nigris albo guttatis :  
 corpore subtùs albo, hypochondriis nigris : rostro nigro, ad basin plumbeo : iride fuscâ : pedibus extùs  
 nigro-fuscis vix viridi tinctis, intùs rufescenti-albidis.

*Juv.* pileo, nuchâ et collo postico sordidè cinereis : gulâ et gutture albis nec nigris : corpore suprâ nigro-fusco,  
 plumis pallidiore marginatis : rostro et pedibus pallidioribus.

*Adult Male in summer* (Archangel). Crown, nape, and hind neck ashy grey, darker on the forehead, and  
 slightly tinged with brown on the sides of the head; chin and entire throat velvety black with a purple  
 or violet tinge; on the upper throat is a patch of white stripes crossing the black; sides of the throat,  
 bordering the black, striped black and white, these stripes increasing in number on the lower throat,  
 where the black patch ends, and where they nearly meet in front; upper parts deep glossy black, marked  
 on each side with two large rows or patches of white cross bars; upper surface of the wings black,

marked with round white spots; quills and tail black; underparts white, the flanks black; bill bluish black, lighter at the base; iris nut-brown; outer portion of the tarsus, the hind toe and outer toe, and two marks across the web blackish brown with a greenish tinge; the inner side of the tarsus reddish white; webs white with a warm reddish tinge from the blood showing through. Total length about 26 inches, culmen 2·6, wing 11·7, tail 2·5, tarsus 2·9.

*Young.* Crown and hind neck ashy grey, brown on the sides of the head; upper parts of the body dull blackish brown, the feathers on the back edged with lighter brownish white margins; chin, throat, and entire underparts white, sides of the lower throat and breast striped with black; bill and feet lighter than in the adult dress.

*Adult in autumn.* Closely resembles the young bird, but has the bill darker, the grey on the crown and hind neck is clearer and brighter, the sides of the lower throat and breast are more clearly striped, and the upper parts of the body are darker.

LIKE that of the Red-throated Diver the range of this bird is very extended; for it is found throughout the northern portion of both the old and new continents during the summer season, migrating southward in winter. In the British Isles it is found at all seasons of the year, and breeds in Scotland. On the English coasts it occurs but sparingly, during cold weather, and is met with from the shore of the Channel up to the north coasts of England. Mr. Cecil Smith informs me that he himself never met with it in Guernsey; but M<sup>c</sup>Couch, the bird-stuffer, obtained one there in January 1875. In Somersetshire, Mr. Smith informs me, it has, so far as he knows, only once occurred. The specimen in question was an adult bird slightly changing to winter plumage, and was killed near Williton, on Lady Egremont's property, in December 1875. Williton is some distance inland; but the country was much flooded at the time. Mr. Cordeaux says that it is not uncommon off the Flamborough coast during severe winters. In Scotland, according to Mr. Robert Gray (B. of W. of Scotl. p. 414), many pairs "take up their summer quarters on various lochs on the mainland in Argyllshire, Perthshire, Inverness-shire, Ross-shire, and Sutherlandshire; and on almost every loch in the Outer Hebrides there are to be found one or two pairs breeding. In Lewis they may be seen on Loch Langhabat and similar sheets of water; and in North Uist I know of at least five different lakes where they breed. Benbecula can likewise boast of several breeding-stations. I have seen both old and young birds there in September." Mr. J. A. Harvie-Brown also, writing on the ornithology of Sutherland, says, the present species "is perhaps more plentiful in the south-western portion of Sutherland than elsewhere in the county, becoming very scarce northward in Edderachyllis, and north-eastward through the rest of the country. In both these directions it gives place to the Red-throated Diver. I consider that in the west the proportion of *C. arcticus* is about three to one of *C. septentrionalis*; and in the north-east this is as nearly as possible reversed. Taking the county as a whole, the two species are about equal in number." In Ireland it is very rare; for Thompson cites but two instances of its capture, though he adds that it has been seen on several occasions.

I do not find it recorded from either Greenland or Iceland; and Captain Feilden says that it has only once occurred in the Færoes, but it is very common in Scandinavia. Mr. Collett informs me that it breeds throughout Norway, though in rather smaller numbers than *Colymbus*

*septentrionalis*, yet it is common from Lindesnæs and the Hvalöer up to the Varanger fiord. It is chiefly met with in the interior, being far less common on the coast; and it is most numerous south of the Dovre, where it is scarcely ever wanting on any sheet of water from the level of the sea to the birch-region. It passes the winter off the coast, and is resident along the entire coast up to Finmark; and Pastor Sommerfelt says that in the winter of 1858-59 several were seen at Karlebotten, in East Finmark. Nilsson says that it is found throughout Sweden, from Northern Skåne and Småland to the high north of Lapland during the summer, but is generally seen on inland water; and in Southern Sweden it is met with also during the winter. According to Dr. Palmén (Finl. Fogl. ii. p. 640) it is found throughout Finland, but is more numerous in the north. It does not breed, however, on the islands off the coast, where it is met with in the spring and autumn. Mr. Brenner obtained it at Ponoj; and Sahlberg and Malmberg found it numerous in the southern portion of the Lapland peninsula. In the northern portion of Fin-Lapland it is common on the lakes, as also in Enontekis; but it is less numerous in Kuusamo, Pudasjärvi, and Kajana, though it is by no means uncommon near Uleåborg. Bodén states that he rarely obtains it near Wasa; and Alcenius records it from the central portion of the coast of Österbotten. It occurs on the lakes near Kuopio, but is not numerous; and this is generally the case throughout Southern Finland; but it is stated to be more numerous at Nyslott, Björneborg, and in the valley of the Kumo river. It arrives on the coast of Southern Finland as soon as the ice breaks up, late in April or early in May, or sometimes earlier, but does not appear in Northern Finland until late in May or early in June. From the interior it migrates early, usually in August, but remains longer on the coast. To the above information obtained from Dr. Palmén's work I can add but little, except that I found it breeding near Uleåborg, where, however, it was much less numerous than the Red-throated Diver. Mr. Sabanäeff says that it breeds on many of the lakes in the Governments of Jaroslaf, Tver, Vladimir, and in the northern portion of the Moscow Government. In South-east Russia it ranges very far south; and northward throughout the Perm Government it is generally distributed, and is very numerous on the lakes. Messrs. Harvie-Brown and Seebohm first observed it at Habariki, on the Petchora, on the 2nd June, and afterwards met with it abundantly both on the islands and on the tundra as far as Dvoinik, generally in pairs, and never in large flocks, as observed by Alston and Harvie-Brown on the Dvina. The present species visits the coasts of Germany regularly during the winter, and is not uncommon; but on fresh water it is, comparatively speaking, rare. There is, however, no doubt that it breeds on some of the lakes of Pomerania and Prussia. Boeck has obtained it in full summer dress; Hintz has found its nest several years in succession; and Wiese states that it breeds at Bütow, and probably also in East Prussia. In Denmark, Kjærbølling says, it occurs now and then on the coasts, but it does not appear to be a common visitant. It occurs on the coast of Holland during the winter season, and is sometimes met with on inland sheets of water; but it is only a rare and accidental visitant to the coast of Belgium; and though somewhat more abundant on the French coasts, yet Messrs. Degland and Gerbe only cite one instance of the occurrence of a female in full plumage. Professor Barboza du Bocage states that it is of very rare occurrence in Portugal; but I do not find any record of its occurrence in Spain. In Italy it is, Count Salvadori writes, the rarest of the family, and seldom occurs, even in winter, beyond the lakes of Como and Garda. It has been recorded from Liguria by Durazzo, and from Tuscany by Savi; but south of that it does not

appear to have been observed. According to Benoit, however, a single example is said to have been obtained at Palermo years ago. I must not omit to state also that Bailly says that it occurs in small numbers in the depth of winter on the lakes of Savoy. It is met with sparingly in Southern Germany; and Messrs. Danford and Harvie-Brown state (Ibis, 1875, p. 433) that in Transylvania it is "commoner than the Great Northern Diver in winter, and solitary birds have been seen during summer. Herr Csáto says that both the young and adult of this, and the young of *C. septentrionalis*, have been killed in autumn in the Strell valley." It has occurred in the winter in Hungary and Austria; and in April 1857 a male in full summer dress was killed on Prince Lichtenstein's estate, Eisgrub. I do not find it recorded from Greece or Turkey; but Professor von Nordmann states that it is abundant on the Black Sea and inland waters in Southern Russia in winter, remaining till May. It appears almost doubtful if it ever straggles as far south as the African coast; for I find no record of its occurrence there beyond the statement made by Loche that it is "very rare" in Algeria; but he gives no instance of one having been obtained there.

In Asia, however, it is found as far east as Japan. Throughout Northern Siberia it appears to be common. Von Middendorff found it breeding not uncommonly on the Boganida and Taimyr, where it arrived about the 6th June (O.S.); and on the 26th June he found the first egg. On the Boganida he saw small young in down late in July, and on the 15th August large ones still in down, without any trace of feathers. Von Schrenck obtained a specimen on the Amoor; and Dr. Radde obtained three on the Central Onon in May 1856. This last explorer says that he found it common in the delta of the Upper Angara, and also in the spring on the rivers of Dauria and the Upper Amoor, where, however, it disappeared in May. In October he again observed it on the Amoor amongst the Bureja Mountains, where he never saw it in the summer. Mr. Whitely says that it is common in Hakodadi harbour in the winter, but is difficult to approach on account of its extreme shyness; but I do not find any instance of its occurrence in China.

It is rather frequent in the northern portions of the Nearctic Region, and is said to be found in tolerable numbers in the Hudson's-Bay Territory. Mr. B. Ross met with it on the Mackenzie River and Great Slave Lake; and it is found off Labrador and in New Brunswick, though I never saw it when shooting in this latter province. In the United States it is rare, though Audubon states that it ranges as far south as Texas. On the Pacific coast it is numerous. Mr. Bannister found it common at St. Michael's; and Mr. Dall obtained its eggs at Fort Yukon. Dr. E. Coues states that it is only known as a winter resident on the west coast of the United States, at which season it reaches their extreme southern border, if not still further; in the spring it passes north, and breeds as high as explorers have penetrated. It has been obtained at least once on the Prybilow Islands, but is rare there.

Like many of its allies, the present species differs considerably in size; and this difference in individuals has caused it to be (perhaps somewhat needlessly) divided specifically, small specimens having been regarded as belonging to a distinct species. This small race, if it can be so called (for in a series every gradation of size is to be found), has been, on our side of the Atlantic, called *Colymbus balticus*, and on the American side *Colymbus pacificus*. Dr. E. Coues, who has gone most carefully into the question, states (B. of the N.W. p. 722) that, after having examined

Mr. Lawrence's types, and compared a series of specimens, he has convinced himself that the Pacific bird cannot be treated as a good species, as it differs but in size, and is merely the extreme link of an unbroken chain.

In habits the Black-throated Diver closely assimilates to its allies the Great Northern and Red-throated Divers; and, like those, it swims with great speed, dives with ease, often remaining for some time below the surface; and when flying, it advances with great rapidity in a direct course, having its long neck outstretched, and propelling itself with quick beats of the wings. During the winter season this bird is usually seen off the coast, and but seldom on inland lakes or rivers; but during the breeding-season it resorts to inland sheets of water for the purpose of nidification. Its cry, like those of its allies, is strange and weird; and the passing traveller is often startled by it as it reechoes through the wild localities where it is found. Mr. Robert Gray says that the natives of Benbecula and North Uist compare it to the words *Deoch! deoch! deoch! tha'n loch a traoghadh*, which may be interpreted as "Drink! drink! drink! the lake is nearly dried up."

When swimming at its ease, this Diver floats with a good deal of the body exposed to view; but directly it perceives that it is noticed, it gradually sinks itself below the surface until only the head and neck are exposed, and propels itself with great speed out of reach of danger. When fired at, it will dive at the flash, and thus frequently escape unscathed, remaining not unfrequently for nearly two minutes below the surface, and reappearing at a considerable distance from the place where it disappeared.

For the purpose of nidification it selects a small islet or a spit of land protruding into the lake, and usually close to the water's edge; and there is always a visible track from the water's edge to the nest, caused by the shuffling mode in which the bird progresses on land. Captain Elwes writes respecting its nidification in Scotland as follows:—"The Black-throated Diver sometimes lays its eggs as early as May 9th, though I have found them fresh six weeks later; and if the first pair are taken, it always lays again in the vicinity of the first nest. I have even heard of a fifth egg having been laid after the second pair were taken. They are not found on the small lochs to which the Red-throated Diver retires to lay, but on large pieces of water containing several islands. In one of these islands, where the shore is soft and shelving, the bird creeps up about a yard from the water and lays two eggs on a bare round spot as large as a dinner-plate, sometimes placing a few bits of grass or rush round them, and always making a visible track to the water by the pressure of her breast. When disturbed by the approach of any one, she dives quietly off the eggs and comes up at a little distance, but is very unwilling to leave the place altogether. They are found in scattered pairs nearly all over the West Highlands, though I do not think they breed in Skye, Mull, or Islay. In winter they are not often seen, and are difficult to distinguish from the Great Northern Diver."

Mr. Collett writes to me, "In Norway, as soon as the lakes begin to get clear of ice, which is usually early in May, the present species reappears at its breeding-haunts, which it had left in the preceding September. Like the Red-throated Diver it often collects in flocks during the seasons of passage; and in the middle of May I have observed flocks numbering as many as eighty individuals passing over the Christiania fiord. The eggs of the Black-throated Diver, usually two, but sometimes only one in number, are deposited close to the water's edge, so that

the bird can crawl up to them at once from the water; for it cannot walk on the ground, but pushes itself along on its belly. On the 25th of June, 1864, I found on the edge of a lake in the fells of the Gudbrandsdale, a single egg of this Diver placed so close to the water's edge that the ripple touched the edge of the nest; and, besides, the ground was so swampy that the egg was quite wet; and yet it contained a fully formed living young bird. In these fell-lakes this Diver feeds almost entirely on the young of *Salmo eriox*, and is therefore a great scourge to the fisheries, on account of which, according to the new game-laws, a price is put on its head. It is, however, by no means an easy bird to shoot: and it is very tough; for it will live for some time even when mortally wounded. When fired at on the water it never takes wing, but seeks safety in diving. Just before it disappears below the surface it frequently utters its deep, loud call-note or scream. Its alarm-note, which is often uttered when it has its young with it, and fears danger, resembles a good deal the deep cry of the Raven."

I possess a fair series of eggs of this Diver, chiefly obtained by myself in Finland, which resemble those of the Red-throated Diver, but are rather darker in tinge of olive and larger in size, measuring from  $3\frac{1}{40}$  by  $2\frac{1}{40}$  inches to  $3\frac{7}{40}$  by  $2\frac{7}{40}$  inches.

The specimen figured is an adult male in full summer plumage, and is the bird above described. The immature bird I have not deemed it necessary to figure.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, juv. Sweden. *b*, ♂ ad. St. Petersburg. *c*, ♂ ad. Archangel (*Piottuch*).

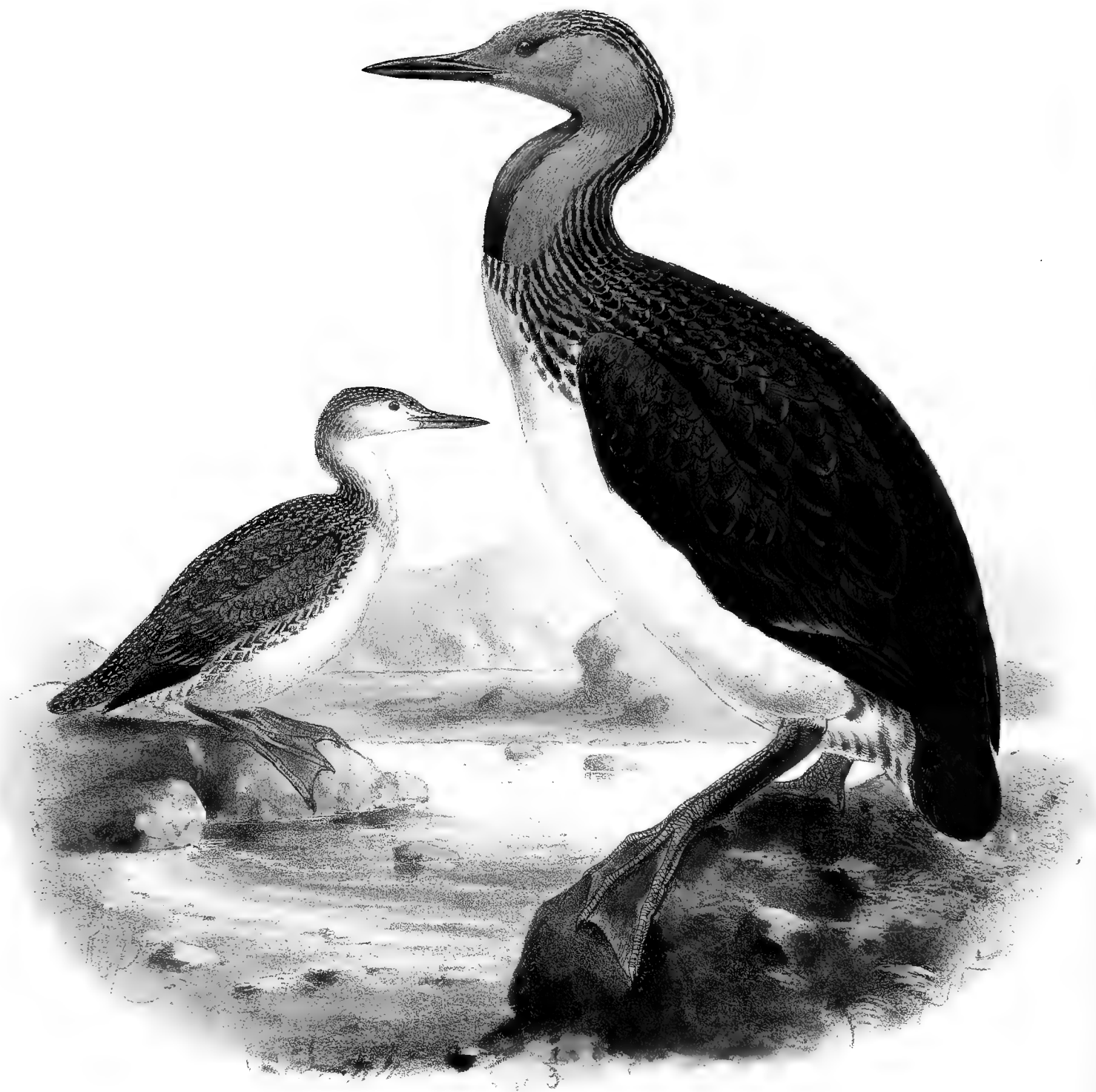
*E Mus. H. B. Tristram.*

*a*, ♂ ad. Kjærringö, Norway, July 1852 (*H. B. T.*).

*E Mus. Salvin and Godman.*

*a*. Fort Anderson, N.W. of Great-Bear Lake, June 21st, 1865 (*R. R. McFarlane*).





REDTHROATED DIVER.  
*COLYMBUS SEPTENTRIONALIS*

## COLYMBUS SEPTENTRIONALIS.

(RED-THROATED DIVER.)

- The Red-throated Ducker or Loon*, Edw. Nat. Hist. Birds, ii. pl. 97, p. 97 (1747).  
*Mergus gutture rubro*, Briss. Orn. vi. p. 111, pl. xi. fig. 1 (1760).  
*Colymbus septentrionalis*, Linn. Syst. Nat. i. p. 212 (1766).  
*Colymbus stellatus*, Müll. Zool. Dan. Prodr. p. 20 (1776).  
*Le Lumme ou petit plongeon de la mer du nord*, Buff. Hist. Nat. Ois. viii. p. 261 (1781).  
*Colymbus striatus*, Gmel. Syst. Nat. i. p. 586 (1788).  
*Colymbus borealis*, Lath. Ind. Orn. p. 801 (1790).  
*Colymbus ignotus*, Bechst. Gemeinn. Naturg. Deutschl. ii. p. 782 (1791).  
*Colymbus leucopus*, Bechst. Gemeinn. Naturg. Deutschl. ed. 2, iii. p. 625 (1809).  
*Colymbus rufogularis*, Meyer, Taschenb. Deutsch. Vogelk. ii. p. 453 (1810).  
*Cepphus septentrionalis* (L.), Pall. Zoogr. Rosso-As. ii. p. 342 (1811).  
*Cepphus stellatus* (Gm.), Pall. tom. cit. p. 344 (1811).  
*Eudytes*, Illig. (*C. septentrionalis*, L.) Prodr. p. 282 (1811).  
*Colymbus lumme*, C. L. Brehm, Vög. Deutschl. p. 978 (1831).  
*Colymbus borealis*, C. L. Brehm, op. cit. p. 979 (1831).  
*Eudytes septentrionalis* (L.), J. F. Naumann, Vög. Deutschl. xii. p. 434 (1844).  
*Colymbus microrhynchos*, C. L. Brehm, Vogelfang, p. 405 (1855).

*Loon*, *Sprat-Loon*, *Red-throated Diver*, English; *Plongeon cat-marin*, French; *Strolaga piccola*, Italian; *Blongiun*, Maltese; *Nordseetaucher*, *rothhälsiger Taucher*, German; *roodhalzige Zeeduiker*, Dutch; *Nordisk Lom*, *Spidsnæb*, Danish; *Laumur*, Færoese; *Karsak*, *Karsauk*, Greenlandic; *Lómr*, Icelandic; *Rödstrubet-Lom*, *Smaalom*, Norwegian; *Smålom*, Swedish; *Kaakkuri*, Finnish; *Gakkur*, Lapp.

*Figurae notabiles.*

Edwards, *l. c.*; D'Aubenton, Pl. Enl. 309, 992; Fritsch, Vög. Eur. taf. 60. figs. 1, 3; Naumann, Vög. Deutschl. taf. 329; Sundevall, Svensk. Fogl. pl. 53. fig. 1; Gould, B. of Eur. pl. 395; id. B. of G. Brit. v. pl. 45; Schlegel, Vog. Nederl. pls. 268, 269; Audub. B. of Am. pl. 478.

*Ad. ptil. æst.* fronte saturatè plumbescenti-cinereâ nigro striatâ: pileo postico et collo toto postico nigris albo striatis: corpore suprâ nitidè nigro-fusco, plus minusve albo guttato: remigibus nigro-fuscis, in pogonio interno pallidioribus: caudâ nigro-fuscâ inconspicuè albo apicatâ: gulâ, capitis et colli lateribus plumbescenti-cinereis, gutture plagâ magnâ ferrugineo-rubrá notato: corpore reliquo subtùs albo, hypochondriis dorso concoloribus: rostro nigro: iride fuscâ: pedibus nigro-fuscis vix viridi tinctis.

*Ad. ptil. hiem.* pileo et collo postico saturatè cinereis, albo striatis: corpore suprâ ut in ptilos æstivali picturato, sed magis guttato: corpore subtùs, gulâ, gutture et capitis lateribus albis: rostro plumbescenti-nigro.

*Juv.* præcedenti similis sed coloribus sordidioribus, maculis in corpore suprâ indistinctioribus et gulâ cum capitis lateribus griseo-fumoso notatis.

*Adult Male* (Greenland). Fore part of the crown deep blue-grey streaked with black; hind crown and entire hind neck and fore part of the back black, the feathers margined with white, giving a regular streaked appearance; on the lower neck these markings are continued so as nearly to meet on the fore part of the neck; entire upper parts brownish black faintly glossed, more or less spotted with small oval white spots; quills blackish brown, lighter on the inner webs; tail blackish brown, slightly tipped with dirty white; sides of the head, neck, and the throat clear blue-grey; on the throat is a large triangular rusty red patch; rest of the underparts white, except the flanks, which are coloured like the back; bill black; iris dark brown; legs blackish brown with a greenish tinge on the outside, and inside along the toes and the centre of the webs dull yellowish fleshy. Total length about 23 inches, culmen 2·5, gape 2·75, wing 11·0, tail 2·1, tarsus 2·75.

*Adult in winter.* Resembles the young, but has the crown and hind neck more distinctly marked with white; the throat and sides of the face pure white, the general coloration is purer and clearer; and the bill is dark blackish lead, becoming black at the tip.

*Young* (Hants, December 1870). Crown and hind neck dark ashy grey, narrowly streaked with white; upper parts as in the adult, but much more profusely spotted, the spots being larger and more lengthened; underparts white; throat and sides of the head marked with dull blackish grey; bill dull bluish white with dusky ridge; legs lighter than in the adult.

*Young in down.* Upper parts blackish brown, darkest on the back; underparts lighter, and almost grey in tinge of colour.

*Obs.* In a series of specimens I find a considerable individual variation in size, not dependent on sex. The variation in those in my collection is as follows—gape 2·75–3·3 inches, wing 10·3–11·3, tail 2·0–2·1, tarsus 2·7–3·0.

THE range of the present species of Diver is very extensive; for during the summer season it inhabits the northern portions of Europe, Asia, and America, being very generally distributed, and in the winter it migrates southward to North Africa and China in the Palæarctic Region, and to Maryland in the Nearctic Region.

In Great Britain it is tolerably common at all seasons, breeding in the northern districts, and occurring in the south of England in winter. Mr. Cecil Smith informs me that it visits Guernsey in winter, but is not numerous; but on the south coast of Devonshire it is very common from the autumn to the spring, and occasionally some remain till they have assumed their full breeding-plumage. In Somersetshire, he adds, it is only an occasional and accidental visitant, but sometimes is found inland as well as on the coast, especially during the season of passage. Mr. Mansel-Pleydell says that it does not visit the coast of Dorsetshire regularly, and that adults of the present species are more frequently obtained at Weymouth than are the Great Northern or Black-throated Divers in that stage of plumage. On the east coast of England it is most numerous in winter; but Mr. Cordeaux remarks that it never entirely leaves the shores of Yorkshire, for he has met with them out at sea in every month of the year. Mr. J. H. Gurney informs me that the present species "is sufficiently common on the coast of Durham to be generally found when sought for, and there, as elsewhere, it is not driven away by the severity of the season in the winter. It is believed that a few may be found in almost any month of the

year; and it is especially plentiful from October to Christmas, when examples in the sombre winter plumage form a part of the spoils of the punt-gunner returning up the 'becks' which intersect the marshes of the Tees; and now and then in September a handsome 'Red-throat' is shot which has not doffed its breeding-plumage, and is an acceptable prize to any local collector. On the 15th May, 1867, I received a fine example in full summer dress from Sunderland, where it had been found dead on the water."

In Scotland it is common at all seasons of the year, and breeds in some numbers in the northern portions of the country. Mr. Robert Gray states that it breeds in many of the islands in freshwater lakes in the west of Scotland, and is permanently resident throughout the Hebrides; and Dr. Saxby writes that it is resident in the Shetland Isles, but is not very numerous during the breeding-season. Thompson says that it is a regular winter visitant to the coasts of Ireland, where it remains from five to six months of the year.

Professor Newton says that it is found on the east coast of Greenland, and breeds in both Inspectorates, as also on the western coast of Davis Straits. It breeds not uncommonly in Iceland, as also in the Færoes, but is said to be rapidly diminishing in the latter islands owing to so many being destroyed during the nesting-season. It arrives about the middle of March, and leaves late in September. Throughout Scandinavia it is common. In the interior of Southern Norway it prefers the subalpine region to the lowlands, and breeds there commonly, though it is not so numerous as the Black-throated Diver. On the sheets of fresh water in the western and northern districts it is very common, especially on the islands within the arctic circle up to the Russian frontier. In the winter and on passage it is common at fresh water and on the fiords in the southern and western districts. Nilsson says that it is generally distributed throughout Sweden, and breeds from Småland up to Lapland, being almost everywhere common; and it occurs throughout Finland, both on the coast and in the interior on the lakes, and I found it very common during the breeding-season in the northern portion of the country. So far as I know they never remain during the winter, as all the lakes as well as the sea are frozen over. In Russia it is very common in the northern portion of the Archangel Government; but Mr. Sabanäeff informs me that it is less common than the Black-throated Diver in Central Russia and the Ural. Northward it is found up to Spitzbergen; and Professor Newton writes (Ibis, 1865, p. 517):—"Breeds as far as the Seven Islands, lat. 80° 45' N. Eggs from the Dépôt Holm and other places have been obtained by the Swedes. A young bird was found by our party on one of the Thousand Islands; and I saw a pair of old ones on Russö, which had evidently a nest not far off. Thus it would seem pretty generally, though sparingly, distributed throughout the whole country. The Red-throated Diver probably feeds its young, according to Dr. Malmgren, on a species of *Apus*, which he found in plenty in freshwater pools on the Stor fjord." It also breeds quite numerously on Novaya Zemlya; and Mr. Collett informs me that in May 1875 a friend of his, Mr. Klerk, who was then in South Varanger, saw on the same day fifteen large and small flocks passing onward in a northerly and north-easterly direction, probably making for Spitzbergen or Novaya Zemlya. On the German coast of the Baltic the present species is common enough in winter, but is very rarely met with on inland waters; and Mr. A. Benzon informs me that it is numerous on the coast of Denmark during the whole of the winter, often remaining until quite late in the spring. Off the shores of the North Sea it is of very

frequent occurrence during the cold season, and is common on the Dutch coast. It also occurs in winter on the coasts of Belgium and France, but is stated to be always in winter or immature dress, never with a red throat. It is very rarely seen on inland waters, and is, on the whole, not of common occurrence. Mr. Adrien Lacroix says that he knows of only one instance of its capture in the Hautes Pyrénées, but that it occurs annually on passage in the Pyrénées Orientales. In Southern France it is exceedingly rare. According to Professor Barboza du Bocage it is found in Portugal in winter, but is rare; and Colonel Irby obtained it in the Straits of Gibraltar; Mr. Saunders saw many between Gibraltar and Cadiz; and Count Salvadori says that it is rare in Italy, where it only occurs in winter, immature birds being usually met with; but Mr. A. B. Brooke states that it is not uncommon in Sardinia. Mr. C. A. Wright says (*Ibis*, 1864, p. 156), "Schembri states that he saw one in 1839 and another in 1841; and I am informed by Dr. Gulia that M. Barthélemy, of Marseilles, shot four specimens (young birds) in Gozo in the winter of 1858-59."

It is found in Southern Germany; and Dr. A. Fritsch says (*J. f. O.* 1872, p. 377) that in Bohemia, "according to Fierlinger, it bred in 1842 and 1850 on the ponds near Pardubice, which might have occurred also in other seasons, as M. Hromadko received an old male with a red throat, which was shot on the 27th April, 1843, and another bird in May 1859, at Ceperka pond." Young birds are met with on passage in many parts of Southern Germany; and Messrs. Danford and Harvie-Brown record the occurrence of immature birds in Transylvania, where, however, the present species is rare. Off the coast of Turkey and Greece it is only known as a somewhat rare winter straggler; and Lord Lilford says the same as regards its presence on the coasts of Epirus. In Southern Russia both immature and adult birds of this species are of not uncommon occurrence from November to April. I have no data respecting its occurrence off the coast of Asia Minor—where it is probably met with occasionally during the cold season; for it appears to range as far south as the North-African coast, as Von Heuglin states that on several occasions he has seen immature birds of the present species in the lagoons of Lower Egypt.

To the eastward the present species is met with as far as the Pacific coast, and thence right across the American continent.

Von Middendorff says that it is common on the Boganida and the Taimyr; Von Schrenck only once saw it on the Amoor, on the 30th May, near the Kutomauda Post; and Dr. Radde, who says that it is distributed throughout Siberia to Kamtschatka, adds that it also occurs on the Lower Amoor and on the coast of the Amoor country. Mr. Swinhoe says that it visits the coast of China during the winter, and is the only species of Diver he observed in Formosa; and Mr. Whitely obtained it in Japan. On the American continent it is common in the north: Mr. Bannister found it numerous at St. Michael's, in Alaska; and Mr. Dall says that it is common at the mouth of the Yukon. Mr. Brown met with it in Vancouver's Island; and it is found on the coast of California. It is said to be numerous in the Hudson's-Bay territory; Mr. Bernard Ross records it from the Mackenzie river; and my brother has found it breeding on Lake Nipigon. In the winter season, and on passage, I frequently observed it off the coast of New Brunswick; and it is stated to range as far south as Maryland, on the east coast of the American continent.

Water seems to be the element where this species and its allies are most at home; for on land it is extremely awkward, and moves along with difficulty and in a most clumsy manner;

and though its flight is swift, yet it is, comparatively speaking, less frequently seen on the wing, except when on passage or on its way from one sheet of water to the other. But in the water its movements are graceful and easy, and, whether swimming on the surface or diving below, it propels itself with great rapidity and ease. It swims low down in the water, and when uneasy or alarmed will submerge its body below the surface, leaving only the head and neck in view. When it dives it vanishes below the surface without noise or flutter, and propels itself along with its wings as well as its feet, frequently remaining for some time before it emerges to view again. When it flies up from the water it flaps for some short distance along the surface, splashing the water as it progresses, and seems as if it had difficulty in rising into the air; but when once well under way, it flies with great rapidity, its flight being direct, the neck being stretched out horizontally. When flying any distance, and when on passage, it flies at a great altitude, and may sometimes be heard uttering its peculiar loud cry, which, like that of its allies, is exceedingly weird and strange, resembling most the agonizing shriek of distress uttered by a drowning person; and even when one is accustomed to hear this wild cry, one cannot always divest one's self of the feeling that something "uncanny" is near, when in the dusk of the evening the wild weird shriek is suddenly uttered in the immediate vicinity. In some parts its cry is supposed to foretell the near approach of rain; but it appears chiefly to circle at a considerable altitude, uttering its cry, during rain. Though shy and very wary when it has been subjected to persecution, it is, as a rule, far less so than its allies; and when unmolested it is tolerably fearless. When in Finland I used very frequently to see the present species in the large lakes in the interior; and I have often reclined on a rock watching several Divers which were swimming and diving quite unconcernedly within a short pistol-range of me. During the spring I collected in Northern Finland, I obtained many eggs of this Diver, which breeds there not unfrequently. Its nest consists merely of a little grass or a few rushes collected in a small depression in the ground close to the water, and is usually placed on a small island or on the shores of an inland lake, or else, at the Gulf of Bothnia, on the shores of the gulf itself. Whether both sexes incubate I cannot with certainty say, because I never succeeded in surprising one on its nest; for its mate, which is seldom far off, at once gives the alarm, and the sitting bird takes to the water. If deprived of their eggs, the birds will remain about near their despoiled home for some time, uttering loud melancholy cries as if bewailing their loss.

The eggs, which are deposited early in June, are two in number, and are always smaller than those of the Black-throated Diver, measuring only from  $2\frac{2}{40}$  by  $1\frac{3}{40}$  inch to  $3\frac{5}{40}$  by  $1\frac{3}{40}$ , are either olivaceous or else dark brown with a warm olivaceous tinge, and are somewhat sparingly spotted and blotched with black; one egg in my collection, however, is quite profusely marked, whereas another is uniform olivaceous brown without a single marking.

The specimens figured are the adult and the immature birds above described, and are in my collection.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a, juv.* Broxbourne, Herts, December 1870 (*R. B. Sharpe*). *b, ad.* Hitteren, Norway, June 1870 (*R. Collett*).  
*c, d, ad.* (in summer plumage). Greenland (*Benzon*). *e, pull.* Archangel (*Piottuch*).



## Family PODICIPITIDÆ.

### Genus PODICEPS.

- Colymbus* apud Brisson, Orn. vi. p. 34 (1760).  
*Podiceps*, Latham, Gen. Synops. Suppl. p. 294 (1787).  
*Dytes* apud Kaup, Natürl. Syst. p. 41 (1829).  
*Pedeithya* apud Kaup, op. cit. p. 44 (1829).  
*Proctopus* apud Kaup, op. cit. p. 49 (1829).  
*Lophaithya* apud Kaup, op. cit. p. 72 (1829).  
*Sylbeocyclus* apud Bonaparte, Comp. List, p. 64 (1838).  
*Tachybaptus* apud Reichenbach, Syst. Av. p. ii. (1851).  
*Æchmophorus* apud Coues, Proc. Philad. Acad. 1862, p. 229.

THE Grebes inhabit the Palæarctic, Ethiopian, Oriental, Australian, Nearctic, and Neotropical Regions, five species being found in the Western Palæarctic Region. In habits the Grebes resemble the Colymbidæ in many respects; and, like them, they are essentially diving and fish-eating birds, and swim lightly and with ease, diving also extremely well, and to a large extent obtaining their food below the surface of the water. The larger species can scarcely walk, but shuffle along like the Divers; but several of the smaller species walk and even run with tolerable ease. Their flight is tolerably swift; but they rise with some difficulty from the water, and are said to be unable to rise from the ground. They feed on fish, aquatic insects, shell-fish, and even, it is said, on frogs. Their call-note, which is usually uttered in the evening or at night, is tolerably loud, but not unpleasant.

Their nest is a large mass of damp aquatic herbage, usually floating on the water; and the eggs, which are numerous, are dull yellowish white, sometimes with a green tinge, the surface of the shell being chalky and the inside greenish. When first laid they are clean, but soon become discoloured by the damp and rotting herbage; and I have seen them so stained that they appeared uniformly dark brown in colour.

*Podiceps cristatus*, the type of the genus, has the bill about as long as the head, slender, compressed, tapering to a sharp point; nostrils linear, oblong, pervious, subbasal; wings small, narrow, acute, the second quill longest, the scapulars large and oblong; tail consisting of short, feeble, downy feathers; tibia bare for a short distance; tarsus short, compressed, anteriorly scutellate; hind toe small, elevated, with two lateral membranes, of which the outer and upper one is very narrow; anterior toes long, connected at the base by a membrane, and having on both sides an expanded margin marked with oblique parallel lines; claws flat, that on the middle toe broader and, with that on the outer toe, serrulate.

By some authors the Little Grebe has been separated from its larger allies and placed in the genus *Tachybaptus* or *Sylbeocyclus*, on account of its having the body shorter and more full, and its bill being shorter than its head; but I have deemed it inadvisable to separate it from the other European Grebes, and therefore retain it in the genus *Podiceps*.







W. Hart lith.

GREAT CRESTED GREBE.  
PODICEPS CRISTATUS.

E. Neale del.

# PODICEPS CRISTATUS.

(GREAT CRESTED GREBE.)

- Colymbus*, Briss. Orn. vi. p. 34, pl. iii. fig. 1 (1760).  
*Colymbus cristatus*, Briss. tom. cit. p. 38, pl. iv. (1760).  
*Colymbus cristatus*, Linn. Syst. Nat. i. p. 222 (1766).  
*Colymbus urinator*, Linn. tom. cit. p. 223 (1766).  
*Le Grèbe cornu*, Buff. Hist. Nat. Ois. viii. p. 235, pl. xix. (1781).  
*Podiceps cristatus* (L.), Lath. Ind. Orn. ii. p. 780 (1790).  
*Colymbus cornutus*, Pall. Zoogr. Rosso-As. ii. p. 353 (1811, nec Gmel.).  
*Lophaithya*, Kaup (*Podiceps cristatus*, Lath.), Natürl. Syst. p. 72 (1829).  
*Podiceps mitratus*, C. L. Brehm, Vög. Deutschl. p. 953 (1831).  
*Podiceps patagiatus*, C. L. Brehm, tom. cit. p. 954 (1831).  
*Podiceps australis*, Gould, Proc. Zool. Soc. 1844, p. 135.  
*Podiceps hectori* (var.), Buller, Essay on N.-Z. Orn. p. 19 (1865).  
*Podiceps widhalmi*, Goebel, J. für Orn. 1870, p. 312.  
*"Podiceps rostratus*, Yarr." (ubi?), Mansel-Pleydell, Orn. & Conch. Dorset, p. 47 (1874).

*Grèbe huppé*, French; *Swasso maggiore*, Italian; *Blongium prim*, Maltese; *gehaubter Steissfuss*, *grosser Lappentaucher*, German; *de Fuut*, Dutch; *Toppet-Silkeand*, *Toppet-Lappedykker*, Danish; *Toplom*, Norwegian; *Hvidstrupig Dopping*, *Skägg-Dopping*, Swedish; *Silkkikuikka*, Finnish; *Gagara khokhlataïa*, Russian.

## *Figuræ notabiles.*

Edwards, *Gleanings*, pl. 360. fig. 2; D'Aubenton, Pl. Enl. 400, 941, 944; Werner, Atlas, *Pinnatipèdes*, pl. 5; Kjærb. Orn. Dan. taf. 39, Suppl. taf. 19; Frisch, Vög. Deutschl. taf. 183; Fritsch, Vög. Eur. taf. 61. figs. 11, 14; Naumann, Vög. Deutschl. taf. 242; Sundevall, Svensk. Fogl. pl. 54. figs. 1, 2; Gould, B. of Eur. pl. 388; id. B. of G. Brit. v. pl. 38; id. B. of Austr. vii. pl. 80; Schlegel, Vog. Nederl. pl. 270; Audub. B. of Am. pl. 479.

*Ad.* pileo et cristâ occipitali bipartitâ nigris vix viridi nitentibus, gulâ, genis et striâ superciliari albis: capitis lateribus inferioribus et jugulo rufis, collari postico nigricanti marginato: collo postico cinereo-nigro: corpore suprâ nigricante, plumis cinereo-fusco marginatis: remigibus secundariis et margine anteriore alarum albis, remigibus reliquis cinereo-fuscis: collo antico et corpore subtùs argenteo-albis, hypochondriis cervino- vel rufescenti-fuscis: rostro fusco, ad basin flavido: iride coccineâ: pedibus extùs viridifuscis, intùs flavo-iridibus.

*Juv.* pileo, collo postico et corpore suprâ fuscis, dorsi plumis pallidiore marginatis: capitis lateribus albis, rufescente fusco striatis: gulâ, gutture et corpore subtùs albis.

*Adult Male* (Lower Volga, April). Crown and occipital tufts greenish black with a greyish tinge; from the base of the upper mandible a reddish white band passes over the eye, joining the white on the cheeks; chin and fore part of the face white; the ruff light brownish-red anteriorly, and greyish black behind; hind neck blackish grey, the fore part white, tinged with buffy brown on the sides; upper parts generally greyish black, some of the feathers edged with dark brownish-grey; anterior edge of the wing, all the short secondaries, and a few of the lower scapulars white; underparts silvery white, the flanks buffy brown; bill blackish brown, yellowish at the base, and along the under mandible; a bare space from the eye to the mouth dusky green; iris carmine-red; legs dusky green externally, greenish yellow internally; toes greenish yellow above, dusky below, the margins and claws dusky. Total length about 22-23 inches, culmen 2.1, gape 2.5, wing 7.4, tarsus 2.5.

*Adult Female* (Lower Volga). Resembles the male, but is smaller, and has the ruff and occipital tufts less developed.

*Young* (Leadenhall Market). Crown and hind neck dark warm earth-brown, the occipital feathers on each side rather elongated; lores and a streak over the eye white, the latter interrupted by a reddish brown streak from the centre above the eye, another broad streak passes below the eye, and another narrow reddish brown streak passes from the eye right along the neck; rest of the head, neck, and underparts white, the flanks brownish grey; upper parts dark brown, the dorsal feathers edged with lighter brown; wings as in the adult, but duller; beak dull greenish yellow, with the ridge greyish brown; iris yellowish; legs greenish yellow with a fleshy tinge.

*Young in down* (South Russia). Crown black, with a bare spot on the forehead and a white stripe through the centre of the crown; chin and upper throat white, with a black spot on each side of the base of the bill; rest of the head and neck white or buffy white, with broad stripes running right down; upper parts buffy brown, with broad black stripes running the whole length of the body; underparts white, becoming buffy brown on the crissum.

*Obs.* The winter dress of the adult bird differs but little from that worn in the summer, except that the occipital tufts and ruff are shorter. Naumann, Yarrell, Macgillivray, and most of the best authorities agree in saying that the adult bird has the lower mandible carmine at the base, and on the upper mandible a carmine streak from the base to beyond the nostrils; but Mr. Booth, the well-known Brighton naturalist, assures me that, though he has shot many, he has never seen this rich carmine colour at the base of the bill. I have unfortunately not seen a fresh-killed specimen for many years; and when I did I omitted to note down the colours of the soft parts, and am consequently unable to state from personal observation if he is correct in his assertion.

FORMERLY the Great Crested or Tippet Grebe used to breed not uncommonly in many parts of England, especially in the fen districts; but it has been so mercilessly persecuted that it has gradually become rare, though, according to Mr. More (*Ibis*, 1865, p. 448), "a few pairs breed in the counties of Sussex, Herts, Suffolk, Norfolk, Huntingdon (perhaps extinct, *Mr. F. Bond*), Worcester, Warwick, Shropshire, Lincoln, Cheshire, and in both divisions of Yorkshire. Yarrell tells us that the Great Crested Grebe breeds on some of the lakes of Wales; but I do not know in which of the districts." It is found chiefly in winter in many parts of the country; and Lord Lilford informs me that it generally appears during severe frosts. In the Humber district, Mr. Cordeaux says, it is only occasionally met with on the Croxby pond, on the North Wolds, and no longer nests in North Lincolnshire. It breeds, however, every year on Hornsea Mere, in the

East Riding, where he has seen both old and young birds in July. In Northumberland and Durham, Mr. Hancock writes (B. of Northumb. & Durh. p. 160), it is "a winter visitant, rare. A specimen, in complete summer plumage, in my collection, was shot in Easter week 1860, at the mouth of the Tyne. Several individuals have occurred in the district; but they are all immature or in winter dress."

In Scotland this Grebe is but rare. Mr. Robert Gray writes (B. of W. of Scotl. p. 405):—"The Great Crested Grebe has come less frequently under my notice in the west of Scotland than any of the other Grebes. I have, indeed, seen but one recent specimen for some years. Mr. Elwes informs me that he has observed it once or twice on Loch Indaal, Islay. It has been more frequently obtained on the east coast, and may be said to be a well-known visitor in the winter season to the larger estuaries. On the Forth it has been repeatedly captured: one was taken as far inland as Stirling. At Dunbar it has also occurred; and on the river Tyne, near that town, specimens have been several times procured. Some of our bird-stuffers seem not to be able to distinguish between this and the next-mentioned species. During the past winter two or three Red-necked Grebes were shown to me both in Edinburgh and Glasgow as specimens of the Great Crested Grebe: the latter, however, may always be easily recognized by its more slender bill, and having the base of the under mandible of a carmine colour; in the former species the colour is yellow." Messrs. Baikie and Heddle do not include it in their '*Historia Naturalis Orcadensis*;' but, according to Edmondston, it occasionally visits Shetland, where, also, Dr. Saxby saw it on the 14th March 1871, on the loch of Watley.

In Ireland, Mr. Thompson states, it is only occasionally obtained, chiefly in the winter, on the sea and freshwater lakes, on some of which latter it breeds annually. Although, next to the Little Grebe, this species is the most common of the genus, its numbers are very limited, and it is but seldom obtained, except during very severe winters.

It does not occur either in Iceland or Greenland, and has been but once recorded from the Færoes, where, according to Reinhardt, a young bird was shot in 1863. In Norway, Mr. Collett informs me, it occurs but rarely, and at long intervals; and one was caught in a fishing-net at Gulosen, near Trondhjem, in lat. 63° N., in November 1871, above which it has not been recorded. It is a summer resident in Sweden, arriving in April and leaving in October. It is distributed throughout Southern and Central Sweden, up at least as far north as Ostergöthland; but Nilsson cannot say how far north it ranges. It is most numerous on the southern lakes of Skåne—such as the Yddinge, Börringe, and Fjälltofta lakes; and during passage it is often seen on the sea. According to Dr. Palmén it breeds not uncommonly along the southern coasts of Finland, but is rare in the interior up to Central Savolax. It breeds in the Kyrkslätt, Esbo, Helsingfors, and Perno districts, and commonly near Åbo. Bergstrand records it from Åland; but it is uncertain how far it ranges up to the west of Finland; Alcenius, however, met with it near Wasa in 1873. As above stated, it is of rare occurrence in the interior; but Aschan found it breeding in some localities in Leppävirta, in Savolax; and a little north of that it is met with as a somewhat rare straggler. It arrives in Southern Finland late in April or early in May, and remains at least into October. Sabanäeff says that it occurs throughout Central Russia, but is less numerous in the southern portions of the Perm Government than elsewhere. In some parts of the Ural it is numerous, and breeds by hundreds, the nests being often near together.

Artzibascheff states that it breeds commonly on the Sarpa. In Poland it is a numerous summer visitant, breeding on most of the larger lakes; and Borggreve says that it is a regular summer visitant to the eastern portions of North Germany, but much rarer in the west, there being fewer large lakes suitable for breeding-purposes. According to Mr. Herman Schalow (J. f. O. 1876, p. 3) it occurs frequently on all large sheets of water in Mark Brandenburg. Of late years it has become scarce on the lake near Tegel and the Upper Havel, whereas it has often been found breeding near Potsdam, on the Lower Havel. On large isolated lakes in the forests it is numerous; and in July 1874 he observed fourteen pairs on the Lake of Samoth near Reisenenthal. Collin states (Skand. Fugl. p. 717) that it "breeds in several of the Danish lakes, as, for instance, on the Fure, Salting, Hul, and Mos lakes, Nonnemölle lake near Viborg, Skandeborg lake, Lægind lake on Mors. According to Dr. P. Heiberg it breeds also in the Sperring and Gyrup lakes and Hjardemaal Klit; but neither this nor any other Grebe has been observed in Vendsyssel. In Schleswig it nests in the Over, Kliplev, Nyhus, and Braballing lakes; and in Holstein in the Plöner and Vesten lakes. It arrives in April and leaves late in September or early in October, though young birds are seen on the fiords and in the bays in early winter." Dr. Blasius writes (J. f. O. 1877, p. 342) that it is undoubtedly found in Schleswig-Holstein in summer, as also near Schwerin (*B.*), where on the 17th of March one individual was observed amongst a number of *Fulica atra*. It is also a summer resident near Krotoschin, Landskron, Altenkirchen, the lake at Seeburg, and Riddagshausen; at the latter place the first egg was found on the 25th of April, 1869; in 1870, on the 6th of April, three eggs were taken. Single individuals have been seen in summer near Walkenried, and during the spring migration near Stiege. Near Breslau they were observed on passage in the end of March, and in autumn in large flocks late in November; but during the spring migration it only occurs singly. It breeds in Holland, arriving in April and leaving in September; and during passage it is very numerous, some also remaining through the winter. It visits the coasts of Belgium in winter, and is of regular occurrence on passage in spring and autumn in France—and breeds in many departments, although less abundantly in the south than formerly.

In Portugal it is rare, but less so in Spain. Lord Lilford writes to me as follows:—"In Andalusia we found this species breeding on the small lakes of Santa Olaya, in the Coto de Doñana, the nests, composed of water-weeds, were very slight, and placed amongst the weed which covered the lake, without any attempt at concealment; but I observed that the birds on leaving the nest went through the performance of pulling a stalk or two of wet stuff over the eggs, and sank quietly into the water, their heads disappearing last. There were three or four pairs of the present species breeding on one of the small lakes, amongst a good number of *Podiceps nigricollis*, *Podiceps minor*, *Hydrochelidon hybrida*, and *Hydrochelidon fissipes*. The nests of all these birds were more or less wet; in some of them the eggs were actually floating; and in the case of the three species of Grebe the eggs were stained to a uniform dark chocolate-colour, and all contained young birds within a few days of hatching. This was in the first fortnight of May 1872. I presume that this dark colour arises from the continual covering of the eggs with wet weeds under a hot sun, as a protection, no doubt, from the Harriers which abound in this district." Mr. Howard Saunders says that its principal haunt is the Albufera of Valencia; but Colonel Irby states that he never met with it towards Casa Vieja and Gibraltar.

Passing eastward I find it recorded as common in winter on the lakes of Switzerland and Savoy; and in the latter country it is found throughout the greater part of the year. In Italy, according to Salvadori, it is common in the winter, and some pairs remain, and probably breed on the larger sheets of water in Tuscany; but it is uncertain if this is the case in Northern Italy and Lombardy. He has seen young birds obtained in Sardinia, and thinks it probable that it breeds in Sicily, which island it visits annually. Mr. A. B. Brooke says (*Ibis*, 1873, p. 349) that it visits the large lagoons of Sardinia in great numbers during winter, where they are hunted and shot down systematically, none being allowed (at any rate near Cagliari) to remain to breed. In Malta it is common, arriving, Mr. Wright says, in September, and may be seen during the greater part of the winter, being sometimes seen also on the spring passage.

In Southern Germany it is a summer resident. Dr. Fritsch states (*J. f. O.* 1872, p. 377) that it frequently breeds in Bohemia, but migrates south in the winter. When on passage it is seen on rivers, and is occasionally caught in fish-nets amongst the floating ice. It occurs regularly in Austria; and Von Tschusi-Schmidhofen says that there are examples in the Carol-Aug. Museum from Zell, Mattsee, Leopoldskron, Golling, &c.; and one was shot in 1874 near Bruck, in Pinzgau. Messrs. Danford and Harvie-Brown write (*Ibis*, 1875, p. 433) that it is very common on the lakes of the Mezöseg, in Transylvania, arriving in March and leaving in October; and the same may be said respecting its occurrence in the countries skirting the Lower Danube. According to Messrs. Elwes and Buckley (*Ibis*, 1870, p. 34) it is "very common on the coast of Turkey in winter, and on the lakes in summer. Large quantities of skins are collected by the Greek 'sportsmen' in the seaports, who sell them for exportation to France." In Greece, Dr. Krüper states, it is numerous in the winter; and Lord Lilford informs me that it is by no means rare in Epirus at that season. In Southern Russia it is resident, except during very severe weather; and Mr. G. C. Taylor found it plentiful in the Bay of Eregli and at Ismid. It is said to be tolerably common in Asia Minor, and is resident in Palestine, where Canon Tristram found it breeding numerously in the marshes of Merom; and in winter he saw it on the Dead Sea, especially near the mouth of the Jordan.

In Africa the Great Crested Grebe is found down to the Cape of Good Hope. In Egypt it is rare. Captain Shelley saw it twice in the Fayoom, and believes that he observed it on the Nile near Keneh; Dr. A. E. Brehm met with it on Lake Menzaleh and the Red Sea, but only singly; Von Heuglin states that it is but rare on the Nile; but Mr. Blanford writes that it is extremely numerous, and doubtless a permanent resident, on Lake Ashangi, in Abyssinia. According to Loche it is abundant in Algeria, and breeds on Lakes Halloula and Fezzara; Canon Tristram once observed it at Tuggurt; and other naturalists have also met with it in Algeria. Favier writes (*vide* Colonel Irby) that near Tangier it is less common than the Little Grebe; some remain in the country to breed, whereas others pass north during March. They are very abundant on the lakes of Ras-Dowra. To this, Colonel Irby adds, "I can quite corroborate the latter statement; for when at these lakes at the end of April the number of these Grebes, as well as of *Podiceps griseigena*, was perfectly marvellous. They were in pairs, but had not commenced laying. These swampy lakes, much covered at the sides with aquatic plants and sedges, must be a Paradise for all Grebes and water-birds; but it is vexation of spirit and almost useless for the ornithologist to go there. The Arabs at the eggng-season move their tents close to the lake and plunder every nest they can find, and further pester Europeans to an unbearable degree, being almost as

annoying and intrusive as the mosquitoes, which are there as troublesome as in any country I have been in." It is said to occur in Senegal, and is recorded from Damara Land by Mr. Andersson, who remarks that he only observed it on the sea-coast, chiefly at or near Walvich Bay, and there it is by no means numerous. It breeds in South Africa; and, referring to its presence in the Cape colony, Mr. Layard writes (B. of S. Afr. p. 373), "the Crested Grebe is common on all our vleys. It breeds in companies, six or eight nests generally appearing within a few yards of each other; these are built on the water—a mere flat form of sedge, *generally damp throughout*; indeed I remarked that every egg taken by us at Zoetendals Vley was *wet*. This might have been caused, however, by the wet water-weed with which each bird carefully covered her eggs as we approached the nest. I watched three birds perform this manœuvre through my binocular. They slid off their nests and rapidly picked up the floating weed, which they carefully disposed over the eggs so as completely to hide them from view. We examined some fifteen or twenty nests, each one of which was thus covered. We never found more than three eggs in each nest. The bird feeds on small fish and water-insects." Mr. Ayres has only once met with it in the Transvaal, where one was caught in shallow water by a Caffre.

In Asia the Great Crested Grebe is found as far east as Japan. It is recorded by several authors from the Caspian. Mr. Blanford saw a pair at Bampur in April, and says that it is common everywhere on the Baluchistan coast. Mr. A. O. Hume states (Stray Feathers, i. p. 265), "this species is very rare inland in Sindh. I only saw it once, and then on the Muncher lake; but in the sea outside the Kurrachee harbour and, as I ascertained, along the coast to Kutch, especially about the mouth of the Indus, and again all the way up the Mekran coast, and notably in both the Gwader bays, it is excessively abundant, though not easy to procure, and the specimens I shot cost me many hours' delightful but still hard work." According to Dr. Jerdon it has occasionally been killed in the Sunderbunds and brought to Calcutta; and Captain Butler writes (Stray Feathers, iv. p. 31):—"I obtained a specimen of the Crested Grebe in a large tank a few miles off the road from Deesa to Ahmedabad. I have received specimens of this from Kutch, and obtained it in Sindh and also on the western coast of Kattiawar, at Beyt, and again in the lagoon at Poorbunder. I have no record of its occurrence in Jodhpoor or Rajpootana generally; and it has not occurred as yet in the neighbourhood of the Sambhur Lake." Mr. Andrew Anderson says, on the authority of Mr. Nicholson, that it breeds in the plains of India; and Mr. J. Scully, who met with it in Eastern Turkestan, says "it was numerous in the lakes of Sughuchak, about twelve miles west of Yarkand, in summer, where it was breeding. The birds were so difficult to approach, however, that I only managed to shoot two; and one of those I lost in the thick reeds and rushes into which it fell. The bird was never seen in winter." I do not find it recorded from Siberia; but, according to Colonel Przevalsky (in Rowl. Orn. Misc.), a single bird was seen, on passage, in April, near the lower Dolon-nor, in Mongolia, and several were noticed on Lake Urgan-nor, in the Hoang-ho valley. It arrives at Lake Hanka late in March, and breeds in small numbers on out-of-the-way ponds. Père David did not meet with it in the interior of China; but Swinhoe states that it appears in large numbers on the southern coast. It does not appear to be common in Japan; for Mr. Whitely only obtained two, one in November 1864 and the other in December 1854, both at Hakodadi.

Its range southward is extensive; for it is found both in Australia and New Zealand.

According to Gould (Handb. B. Austr. ii. p. 511) it "inhabits the inland waters of Tasmania and the whole of the southern portions of the continent of Australia where localities are favourable to its existence;" and it is also found in New Zealand, where, Mr. Travers says (in Buller's B. of N. Zeal. p. 355), it is "found, at all seasons of the year, upon Lake Guyon, a small lake in the Nelson Province, lying close under the Spencer Mountain-range." Mr. Gould and Mr. Buller have described the Australian and New-Zealand birds as distinct; but Dr. Finsch pointed out that, on comparing them with German specimens, no specific difference could be found; and Mr. Buller, agreeing with this rectification of the synonymy, writes (Ibis, 1870, p. 459):—"The specimen from which I took the original description of my *Podiceps hectori* did not present any white markings on the wings or scapulars; but this was probably due to the condition of the dried skin; for in all the specimens I have since examined, this character is sufficiently conspicuous. My supposed species, like Mr. Gould's *Podiceps australis*, must therefore be held synonymous with the well-known *Podiceps cristatus*."

Many authors have recorded the occurrence of the Great Crested Grebe in North America, some even stating that it is not uncommon; but Dr. Brewer (Ibis, 1879, p. 113) denies its presence there, and states, "No specimen of *Podiceps cristatus* is known to have been ever taken in North America."

Like the other Grebes the Great Crested Grebe is essentially a water-bird, being an expert swimmer and diver; but on land it is clumsy and evidently out of its element, being far more so than the smaller species. When alarmed it plunges into the water, and seeks safety under its surface in preference to taking wing, though when it has reached a considerable altitude it flies with some speed, and by no means so heavily as one would imagine from the small size of its wings. When flying it carries its head and neck stretched straight forward, the legs being stretched equally straight out behind; and it propels itself by very quick flaps of its short wings, its flight being very direct; and when it alights it almost falls out of the air onto the water, striking at first with its breast.

In its general habits it is not very companionable, either toward others of its own species or other waterfowl, at least during the breeding-season, and will drive away intruders from the vicinity of its nest. Its voice is powerful and deep in tone, the usual call-note being a loud oft-repeated *keck, keck, keck*, which is sometimes prolonged into a louder note resembling the syllables *kreworr, kreworr*, this note being its pairing-cry.

The food of this Grebe consists of various kinds, small fish, aquatic insects and their larvæ; and, according to Naumann, it will also devour small frogs—vegetable substances being also found, though in very small quantities, in its stomach. It obtains its food chiefly, almost exclusively, by diving.

It is a somewhat curious fact that this Grebe, even when quite young, makes a regular practice of swallowing feathers; and until old enough to be able to pluck them from their own bodies, the young birds obtain the necessary supply from their parents. The first naturalist who observed and pointed out this strange peculiarity appears to be the elder Mr. Meves, who, in an article published in 1805 (Wied. Arch. für Zool. iv. pp. 178–180), showed that *Podiceps griseigena* habitually swallows its feathers, as does the present species; but he never found any in the stomachs of *Podiceps auritus* and *Podiceps fluviatilis*. Mr. Meves suggests that, as the larger

Grebes often swallow tolerable-sized fishes, the bones of which are large and sharp, these feathers may protect the coats of the stomach.

The Great Crested Grebe has for long been greatly persecuted on account of the rich silky texture and appearance of the under surface of the body, its skin being a well-known and very marketable article and much in request for trimmings. In many parts of Europe it is systematically hunted in boats on the large lakes and shot down. Yarrell gives an account of Grebe-shooting on the Lake of Geneva; and Lord Lilford, who has pursued that sport on the same lake, sends me the following notes:—"We used to pursue these birds persistently on the Lake of Geneva in the winter of 1850-51, but, owing to the clumsiness of our craft and the laziness and timidity of our boatmen, with very moderate success. The Grebes begin to appear on the lake about the end of October, and from that time till about the middle of March are to be found, occasionally in great numbers, off most parts of the northern shores, especially near Vevay and Ouchy. A perfectly calm frosty day, without a ripple on the water, is necessary for success, as the Grebe, when hard pressed, will only just put its nostrils above the surface, and sometimes stick close to the boat, and get fresh wind unperceived. Out of a flock of perhaps fifty the greater part would take wing on our approach; three or four would remain and commence diving; and we used to reckon that a bird which dived three times would not fly. The only way to kill these birds was to fire just under their heads, when they plunged into the charge. The skins were at the time above mentioned worth from six to eight francs a piece. The Swiss boatmen used to say that as soon as the crest began to appear the Grebes would not dive, and that it was consequently useless to chase them. I have certainly noticed that on the Norfolk broads these birds take wing more readily in March and April than at other times of the year. This species is not uncommon in winter in Epirus, where we met with it on the lagoons near Bastia, as also in Sardinia, and on the coast of Sicily."

Mr. A. O. Hume gives a very graphic account of Grebe-shooting in India, which I transcribe (*Stray Feathers*, i. p. 142) as follows:—"Any one who likes may laugh; but to me a Grebe-chase at sea is a first-rate sport. At Gwader there are two fine bays, one in front and one behind the town, which is built on a broad spit of sand connecting the mainland with a huge rocky headland that, at the distance of a few miles, appears from the sea to be an island. In both bays numbers of Grebes, both the common Crested and the Black-necked, are seen dotted about. You get a light native canoe, just holding two rowers besides yourself, a rather crank concern, but which if you are only steady, rises over the swells like a duck. Picking out your particular Grebe, you give chase, kneeling low in front of the boat. To-day there was no wind, and the surface was unrippled, but there was a long delicious swell, rocking one slowly and tenderly, altogether charming, but slightly interfering with the sport, for which a dead calm is best. When you get within 100 yards of your bird, he begins, if you go straight at him, to swim away almost as fast as you can pull; and if you gain on him, he dives; but if you direct your course so as to pass by him at about sixty yards, he will often, if he has not previously been fired at, allow you a snap-shot at that distance; I say a snap-shot, because he is watching you all the time, and you must fire the instant you raise your gun, or you have no chance. The second Grebe I killed to-day I rolled over dead the first shot, when passing by him at about fifty-five yards; the first, though similarly approached, dived at about eighty yards. We pulled as hard as

possible after him; and he showed again at about seventy yards off. My gun, a very heavy, long-barrelled double, 10 bore, with No. 2 green cartridge, was at my shoulder, full cock. For a wonder the bird appeared exactly where I expected; the very second the crown of its head showed on the surface, I pulled the trigger, and yet I was too late; the shot only struck the troubled water where it had disappeared.

"Then we pulled an incredible time, full five minutes I am sure, before he again appeared; and then he turned up some 100 yards off, on the port bow. I instantly fired, not with any prospect of touching him, but to make him dive and so fatigue himself. We were within seventy yards of him when he next rose; and he was not suffered to keep his head one second above water. Next time, I still looking out in front, he popped his head up close *behind* the boat; and before I could turn to fire (one has to be judgmatical in kittle crafts like these) he was off. We 'reversed the engines,' and went back on our track as hard as we could go; but when he rose he was a good hundred yards ahead; he got the contents of a barrel sent after him promptly; and the men making a tremendous spurt (on which he had not calculated), he rose next time at about fifty yards, and, quick as he was, could not quite escape the shot. Next time he was a little further; but he did not dive so quickly, and I distinctly saw the shot catch him. We pulled up sharply; but he had turned under water, and when he next showed up he was more than a hundred yards astern. I fired as usual; but he did not dive. This was a good sign, and showed he was at least a little out of breath; when we were about seventy yards off, he again dived, and came up at about thirty yards off us, broad on the quarter, but showed himself only for one second, being out of sight again before the shot could reach him. Hard as the men pulled (we had had to turn the boat), he was sixty yards at least ahead of us when he rose; but this time he was unable to get under again quick enough, and one shot caught him in the neck, and there he floated dead at last. I was greatly delighted; and yet it gave one a kind of pang to see his lovely white satin breast upturned, rising and sinking slowly in the bright sunlight on the soft green swells. I almost wished I had not been quite so successful; or, rather, what I exactly wished was, that I could have got my specimen and he remained alive and jolly all the same. Two of the birds procured to-day fell to the first shot; most of the rest entailed long chases: one took fourteen shots to bring him to bag; two we lost after much labour, certainly when partly tired out, owing to their getting in amongst others and our then following the wrong birds, which, of course, were quite fresh. One bird, certainly wounded, disappeared; it dived, and never again rose to the surface before or behind, on one side or the other; and I can only conceive that some shark, of which there are great numbers here (indeed sharks' fins exported to China are the most important staple of the Gwader trade), must have picked it up.

"No kind of sport probably requires such undivided attention, such quickness of eye, and such rapidity of firing; and though I bagged only eight birds in several hours of hard fagging, I must have fired at least eighty shots, and as any one of at least half of these might have been successful, the excitement was maintained throughout, the more so that the moment one bird was secured another was at hand, turn on whichever side you would; and when to this is added the bright sun, the clear water, the delicious sea-air, the constant rapid pursuit, and all the surroundings of 'sea and cliff and silver strands,' I submit that I have said enough to justify my *penchant* for Grebe-hunts."

The nest of this Grebe is a mere heap of aquatic herbage, when first constructed rising several inches to a foot above the water, on which it floats; but it soon becomes worked down until it is but little above the surface. It is almost flat, only slightly depressed in the centre, probably by the weight of the bird, and soon becomes sodden with wet. The eggs, three or four in number, are at first dull white with a faint yellowish-green tinge, but soon become soiled and discoloured. Both male and female work at the construction of the nest; and both take a share in incubation, the female, however, sitting longer than her mate.

The eggs (which, as above stated, are dull white, the surface dull and chalky) measure from  $2\frac{6}{40}$  by  $1\frac{15}{40}$  inch to  $2\frac{9}{40}$  by  $1\frac{20}{40}$  inch in size.

The specimens figured are an adult male in the foreground and an immature bird, rather older than the one above described, in the background.

In the preparation of the above article I have examined the following specimens:—

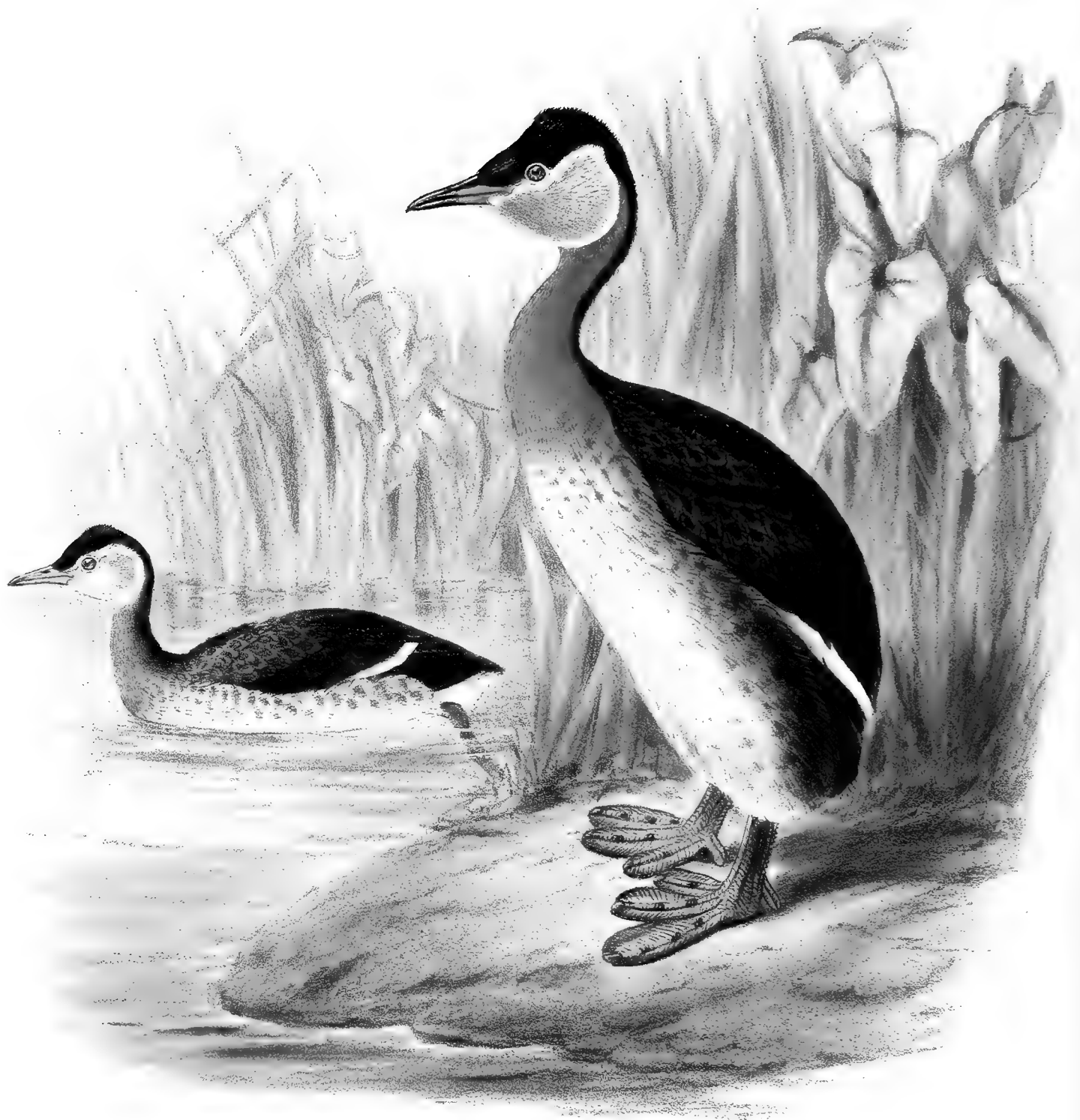
*E Mus. H. E. Dresser.*

*a*, ♂ *ad.*, *b*, ♀ *ad.* Lower Volga, April 1877 (*W. Schlüter*). *c*, *juv.* Leadenhall Market (*H. E. D.*). *d*, *pull.* South Russia (*Möschler*). *e*, ♀ *ad.* New Zealand.

*E Mus. Brit. Reg.*

*a*. Erzerroom, September 21st, 1839. *b*. Sea of Galilee (*H. B. Tristram*). *c*. Lake Ashangi, Abyssinia, May 2nd, 1868 (*W. T. Blanford*). *d*. Antarctic Expedition. *e*. New Zealand.





RED-NECKED GREBE.  
*PODICEPS GRISEIGENA*

# PODICEPS GRISEIGENA.

(RED-NECKED GREBE.)

- ?*Colymbus vulgaris*, Scop. Ann. i. Hist. Nat. p. 78. no. 102 (1769).  
*Le Grèbe à joues grises ou le Jougris*, Buff. Hist. Nat. Ois. viii. p. 241, Pl. Enl. 931 (1781).  
*Colymbus griseigena*, Bodd. Tabl. des Pl. Enl. p. 55 (1783, ex D'Aubent.).  
*Colymbus subcristatus*, Jacq. Beitr. zur Gesch. d. Vög. p. 37, pl. 18 (1784).  
*Colymbus parotis*, Sparrm. Mus. Carls. pl. 9 (1786).  
*Colymbus rubricollis*, Gmel. Syst. Nat. i. p. 592 (1788).  
*Podiceps rubricollis* (Gm.), Lath. Ind. Orn. ii. p. 783 (1790).  
*Colymbus longirostris*, Bonnat. Tabl. Encycl. et Méth. i. p. 54 (1790).  
*Podiceps subcristatus* (Jacq.), Bechst. Gemeinn. Naturg. Deutschl. iii. p. 546 (1809).  
*Colymbus cucullatus*, Pall. Zoogr. Rosso-As. ii. p. 355 (1811).  
*Colymbus nævius*, Pall. tom. cit. p. 356 (1811).  
*Pedetaithya*, Kaup (*Colymbus subcristatus*, Jacq.), Natürl. Syst. p. 44 (1829).  
*Podiceps canogularis*, C. L. Brehm, Vög. Deutschl. p. 958 (1831).  
? *Podiceps longirostris* (Bonn.), Bp. Icon. Faun. Ital. Ucc. Introd. p. 1 (1832).  
*Podiceps griseigena* (Bodd.), G. R. Gray, Gen. of B. iii. p. 633 (1846).  
*Podiceps holbölili*, Reinh. J. für Orn. 1854, p. 430.  
*Podiceps cooperi*, Lawr. B. N. A. (in text) 1858, fide Coues, B. of N.W. p. 730 (1874).  
? *Podiceps affinis*, Salvadori, Att. Soc. Ital. Sc. Nat. viii. fasc. 14 (1866).  
*Podiceps griseigena*, var. *holbölili*, Coues, Key N. Am. B. p. 337 (1872).

*Grèbe jou-gris*, French; *Svasso collo-rosso*, Italian; *rothhalsiger Lappentaucher*, German; *de Roodhalsfuut*, Dutch; *Rödhalset-Lappedykker*, Danish; *Graastrubet Lappedykker*, Norwegian; *Gråstrupig-Dopping*, Swedish; *Harmaakulkku-wiku*, Finnish; *Pogannka-krasnocheïa*, Russian.

## *Figuræ notabiles.*

D'Aubenton, Pl. Enl. 931; Werner, Atlas, *Pinnatipèdes*, pl. 6; Kjærbo. Orn. Dan. taf. 39, and Suppl. pl. 19; Fritsch, Vög. Eur. taf. 61. figs. 6, 9; Naumann, Vög. Deutschl. taf. 285; Sundevall, Svensk. Fogl. pl. 54. fig. 3; Gould, B. of Eur. pl. 389; id. B. of G. Brit. v. pl. 39; Schlegel, Vog. Nederl. pl. 271; Audub. B. of Am. pl. 480.

*Ad. ptil. æst.* pileo, nuchâ et collo postico nitidè nigricantibus, mento, gulâ et capitis lateribus cinereis albo cinctis, gutture et colli lateribus rufis: corpore suprâ nigro cinereo tincto, plumis pallidiore marginatis: remigibus primariis et secundariis intimis nigro-fuscis, reliquis albis: subalaribus albis: corpore subtùs argenteo-albo, hypochondriis fusco-cinereo lavatis: rostro nigro, ad basin luteo: pedibus extùs viridinigris, intùs virescenti-luteis: iride coccineâ.

*Ad. ptil. hiem.* corpore suprâ, pileo et collo postico magis cinereis, gulâ et capitis lateribus albis, gutture fusco-cinereo nec rufo.

*Juv.* præcedenti similis sed capitis lateribus albo striatis et collo imo vix rufescenti lavato.

*Adult Male in summer* (Lake Onega, 26th July). Crown, nape, and hind neck black, slightly glossy; chin, upper throat, and cheeks ash-grey slightly bordered with white, the ruff very slightly developed; fore part and sides of the neck rich brownish red; rest of the underparts silvery white, the flanks streaked with dusky greyish; upper parts greyish black, the margins of the feathers lighter; primaries and inner secondaries blackish, the remainder of the secondaries white; under wing-coverts white; bill black, the basal portion of the gape yellow; iris carmine-red; feet externally greenish black, internally dull yellowish, the margins of the lobes dusky. Total length about 17·5 inches, culmen 1·9, gape 2·2, wing 7·2, tarsus 2·2, middle toe with claw 2·6.

*Adult Female.* Does not differ from the male in plumage, but is smaller in size, measuring—culmen 1·6 inch, gape 1·85, wing 6·8, tarsus 1·9, middle toe with claw 2·3.

*Adult in winter* (Leadenhall Market, December). Differs from the adult in summer in having the crown, nape, and upper parts greyer, the upper throat white, and the neck brownish grey, the rich red being entirely wanting.

*Young* (Archangel, 12th August). Differs from the adult in winter in having the sides of the head streaked with white, and the neck somewhat tinged with reddish.

THE present species inhabits the temperate portions of Northern Europe, Asia, and America, ranging tolerably far north in the breeding-season, and extending down even into North Africa.

In Great Britain this Grebe is only known as a somewhat rare straggler; and it does not breed with us, though examples are occasionally met with in full summer dress. It has been found in Cornwall and the counties bordering the Channel, Essex, Norfolk, and Cambridge, and is said to occur every season in the latter counties as well as in Lincolnshire. Mr. Cordeaux, in his 'Birds of the Humber District' (p. 179), says of it:—"Not so common as the Great Crested Grebe, but occurring every winter in limited numbers along the coast, between Flamborough Head and Spurn Head, also off the Lincolnshire coast. It is the most marine of any of the Grebes, and rarely obtained in the summer plumage; young birds have red necks, but very different from the adults. In January 1865 I obtained a female taken alive in a pond in the parish of Barnoldby-le-beck. The same winter, in February, Mr. Boulton had three specimens of this Grebe in the flesh, all immature females, shot in East Yorkshire." According to Mr. Hancock it only appears in Northumberland and Durham in severe winters; but he possesses an example in summer dress taken alive on Cullercoats sands.

In Scotland, Mr. Robert Gray says (B. of W. of Scotl. p. 406), "although occasionally shot in the western counties in full summer plumage, the Red-necked Grebe does not breed in any part of Scotland; it leaves us in April, returning in autumn, and is sparingly distributed in the winter season. So far as I can judge, it is much more common in the eastern counties. In East Lothian it is frequently obtained; and from that county northward it cannot be called uncommon. Mr. Angus states that he shot a specimen in breeding-dress on the 2nd May 1867, in Aberdeenshire.

"The Red-necked Grebe is now and again obtained in the creeks in the inner group of islands; but no specimen has ever yet reached me from the Outer Hebrides. It appears to be

not uncommon in Orkney, as one might indeed expect, seeing that the species has been found breeding in some numbers in countries lying to the north-east of Scotland." According to Dr. Saxby it is occasionally met with in autumn and spring in Shetland, but it is rather scarce than otherwise.

In Ireland, Mr. Thompson writes (B. of Irel. iii. p. 184), this Grebe "is only known as an extremely rare winter visitant. It is the rarest of the Grebes in Ireland. The first recorded specimen that came under my inspection was an immature one procured late in the autumn of 1831 (by Dr. J. D. Marshall) from the captain of a vessel, who shot it on the coast of Down: it is preserved in the Belfast Museum. One which I have seen in the collection of Mr. Warren, of Dublin, was noted as sent to the metropolis from the county of Wexford on the 24th of February 1838; but as the note was not made until some time after the receipt of the bird, possibly it may be the same individual that a correspondent informed me had been found on the shore near Arklow on the first of that month. It was said to be a female, and to agree with Jenyns's description of the 'young at the age of two years.' One was shot in December 1842, at the mouth of the Glengariff river, Bantry Bay, by Mr. G. Jackson, gamekeeper, and was the only individual he ever met with. In the collection of Mr. John Watters, jun., Dublin, I have seen a specimen of this Grebe, stated to have been shot on a lake at Sandymount, near that city, on the 24th of January 1848. One only of these birds has come under my examination in a recent state. It was shot in Belfast Bay on the 23rd of February 1850, where it had been observed for the few preceding days."

It has been obtained on three occasions in Greenland; and on these examples it has been proposed to found a new species (*Podiceps holbælli*), which, however, does not appear to me to be worthy of specific rank. It is said to have occurred in Iceland; but it appears almost doubtful if such is the case. In Scandinavia, however, it is resident, though not common. Mr. Collett says that, though rather rare than otherwise, it is commoner than any other Grebe in Southern Norway, and probably breeds in many districts. It is found there at all seasons of the year. It has been obtained at Mandal and up to Stavanger. Nilsson says that it is not uncommon in Southern Sweden, but near Gottenburg it is rare, and only occurs in Bohuslän in winter. According to Dr. Palmén it breeds but rarely in Southern Finland; but it ranges northward into Southern Lapland, where Mr. A. E. Nylander met with it in Kittilä, and believes that it ranges even further northwards. It arrives in Southern Finland early in May; but Dr. Palmén does not know when the autumn migration takes place. I have received examples from near Archangel, where it is said to breed; but Mr. Sabanäeff says that it occurs in the northern part of Central Russia on passage, and breeds in the south and south-eastern districts, where it is common. He did not observe it in the Ural. According to Mr. Taczanowski it breeds in Poland, but is much less common than the Great Crested Grebe.

In North Germany it breeds here and there in the eastern portion, but is only rare on passage in the west. I have received eggs from near Stettin; and it is said to breed not uncommonly near Danzig. In Denmark it is the commonest of the Grebes, and breeds, Mr. Collin says, on Möen, in Roeskildeegnen, at Helsingör, on Furusö, at Östrupgaard, near Odense, and at Utterslevmose; and he himself found it breeding on several lakes in Jutland, and on Fyen. Melchior took its nest at Gammelsö, in Seeland; and Faber says that it nests on Samsö, in

Northern Seeland. In the Netherlands and East Friesland it very rarely remains to breed, but it is not rare on passage, and, Baron von Droste-Hülshoff says, is one of the commonest of the Grebes in Borkum during migration. In Belgium and France it is found at the two seasons of passage, but is rare, especially in the south of France, adult birds being less frequently met with than those in immature dress. Professor Barboza du Bocage includes it in his list of the birds of Portugal with a query; and it appears doubtful if it inhabits Spain; for Colonel Irby states that he has no record of its occurrence in that country, and it is not included by Mr. Saunders in his list of the birds of Spain. It is, however, said to be not very rare on passage in Savoy and Switzerland; but it is rare in Italy: Salvadori says that he has seen examples obtained in Piedmont, Lombardy, Venetia, and Liguria; and, according to Savi, it has occurred in Tuscany, beyond which it is very rare. It has been stated by Benoit to have been obtained at Messina, in Sicily; but Doderlein has not obtained it in that island. In Southern Germany it is found here and there; and Dr. Anton Fritsch says that in Bohemia "it breeds rarely at the ponds near Kopidlno, formerly pretty frequently near Pardubic. It does not seem to occur in Southern Bohemia, as there is no specimen of it in the museum at Frauenberg. Two young examples were recently shot near Rusin, not far from Prague." Messrs. Danford and Harvie-Brown met with it in Transylvania, where it is uncommon; but I do not find it recorded from Turkey or Greece, though Lord Lilford states (*Ibis*, 1860, p. 349) that it is rare in the Ionian Islands, and occasionally occurs in winter at Butrinto. In Southern Russia, Von Nordmann says, it is very common, especially on salt lakes, except during bad weather, as it is more sensitive to cold than any other species. I do not find it recorded from Asia Minor or Palestine; and Von Heuglin writes (*Orn. N.O.-Afr.* p. 1361) that it but rarely appears in North-east Africa, and is probably only a winter visitant to the Nile delta.

Curiously enough it would seem to breed in North-west Africa; and Favier says (*vide* Colonel Irby) that it "is less common near Tangier than *Podiceps cristatus*, being seldom observed on passage. Some remain in the country to breed, the others migrating northwards in March, returning again during September. They are more abundant at the lakes of Ras-Dowra, and are there called 'Mazan' by the Arabs." To this Colonel Irby adds the following notes:—"I have seen specimens of the Red-necked Grebe obtained in Morocco by Favier so young that they must have been bred in the country; and although I was unable to procure a specimen for identification, I am confident I saw several of this species at Ras-Dowra in April." Loche records it from Algeria as very rare in winter, and adds that the specimen in the museum at Algiers was obtained on Lake Fezzara. There appears to be but one form of this Grebe in Europe, individuals differing slightly in size; but in Asia and in North America there is a form which differs somewhat in having a longer bill and a longer tarsus, and in being generally rather larger in size. I have not been able to examine a sufficiently large series of specimens from North America and Asia to enable me to give a decided opinion on the subject; but it appears to me that this form is scarcely deserving of specific rank, and I have therefore included the synonyms in the above list. In the series of European examples I have examined, I find that the variation in measurements of adult males is as follows, viz. wing 7.1 to 7.3 inches, gape 1.85 to 1.95, tarsus 2.1 to 2.3, middle toe with claw 2.55 to 2.75; whereas Dr. Coues gives the measurements of American specimens as follows (*B. of N.W.* p. 731), viz. wing 7.0 to 7.8,

gape 2·6 to 3·10, tarsus 2·35 to 2·6, middle toe with claw 2·8 to 3·05. Two adult birds from North-west America, however, in the British Museum, are rather smaller than those measured by Dr. Coues; for I find that they have the gape only 2·35 and 2·45 inches, the tarsus 2·2 and 2·3, and the middle toe with claw 2·7 and 2·8; and all that can be said of them is that they are large-billed varieties of the present species.

This large-billed form appears to extend over Asia and North America generally. Examples I have examined from Erzeroom have the bills as small as in others from Western Europe; but in Turkestan, according to Dr. Severtzoff, both the large-billed and small-billed forms are found; they are not, however, common there. It does not occur in India or China, but is met with in Siberia and Japan. Von Middendorff does not include this Grebe; but Dr. Radde met with it at Kulussutajeffsk, where it arrives about the 2nd (14th) May; and Von Schrenck states that it certainly occurs throughout the Amoor country, as Mr. Maack obtained it both on the Upper and Lower Amoor. He gives a table of measurements, showing that examples from the Amoor, Japan, and Kamtschatka are larger in size than the bird found in Europe proper.

In North America this Grebe inhabits the fur-countries, and in the Atlantic States as far south as Pennsylvania in winter, being found both on the east and west sides of the continent. I find it recorded from many parts of Canada, New Brunswick, and the Atlantic States. Mr. C. H. Merriam writes (B. of Connect. p. 137):—"It is a rather rare winter visitant in Connecticut; Captain Brooks says that he has not seen one for years. It occurs both on fresh and salt water. Linsley took it at Stratford; Mr. J. H. Sage has a specimen which he took at Saybrook, Conn., on the 23rd February 1875; Dr. Wood has a very handsome specimen, in full plumage, shot near East Windsor some years ago; and I am informed by Dr. Cary, of Hartford, Conn., that one was shot in that vicinity by Jerry Crocker on the 19th October 1860." With regard to its occurrence in North-western America, I find that Mr. Dall says it was not uncommon at St. Michael's, Alaska, and on the marshes on the river up to Fort Yukon, where Mr. Kennicott obtained the eggs. Bischoff also procured it at Sitka.

In South America there is another tolerably closely allied but fairly separated species, *Podiceps major*, which differs in having a very much longer and stouter bill, and more white on the wing; the grey on the throat and cheeks is much darker, and gradually merges into the dark colour on the crown, there being no white margin to that grey as in *Podiceps griseigena*.

This Grebe, like the Great Crested Grebe, frequents chiefly inland sheets of water, only visiting rivers and the sea-coast during passage, and but for a short time. It differs, however, from that species in its preference for smaller sheets of water; and instead of frequenting large open places, it prefers those where there is plenty of aquatic herbage, amongst which it can seek refuge when disturbed; but at the same time it is less seldom found amongst the reeds and rushes than its smaller allies. It is generally to be seen swimming or diving, and spends the major portion of its existence in the water, being an expert diver and quick swimmer, though in both these respects it does not come up to *Podiceps cristatus*. It is, however, lighter and quicker in some of its movements than that species, it takes wing far more easily, and flies more swiftly and lightly, and will not unfrequently fly off at once on being disturbed, instead of seeking safety by diving. On land it is extremely awkward; and though it can walk upright, it does so unwillingly, and only for a short distance, and when resting on land it reclines on its stomach like a Diver.

Its call is a loud tolerably clear *keck, keck, keck*, which resounds to a considerable distance, and is by no means pleasant, but rather the contrary, especially when heard in the stillness of the evening during the breeding-season, when its call-note is modified so as to form a sort of song, if such it can be called. It breeds amongst the reeds and flags on large ponds, forming a massive nest consisting merely of a mass of damp aquatic herbage, which is generally floating in the water, and is frequently moored by being attached to the reeds or rushes growing near. At first the upper portion is tolerably dry, and there is a cup or depression in the centre; but soon, owing to the bird continually bringing water with it as it shuffles onto the nest, the latter becomes sodden and wet until it resembles more a mass of herbage driven together by the wind than a nest. The eggs, three or four in number, are like those of *Podiceps cristatus*, but are smaller, those in my collection varying from 2.0 by  $1\frac{1}{4}$  to  $2\frac{1}{4}$  by  $1\frac{1}{4}$  inch in size. When first deposited they are clean buffy white with a greenish tinge; but soon the damp herbage in the nest sullies the eggs and discolours them considerably. When the bird leaves its nest it covers the eggs up carefully, never leaving them exposed. Very soon after the young are hatched they leave the nest and can swim with ease, soon learning also to dive.

The food of the Red-necked Grebe consists of small fish and aquatic insects of various kinds; and occasionally remains of tender shoots of aquatic plants are also found in its stomach. Like its allies it obtains its food chiefly by diving, and but seldom takes it from the surface of the water.

The specimens figured are an adult male in summer dress and an adult in winter plumage, the latter being in the background of the Plate.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, *ad.*, winter dress. Leadenhall Market. *b*, ♂. Schleswig, January 20th, 1870 (*Schlüter*). *c*, ♀ *ad.* Holbok, Denmark, June 9th, 1871 (*Benson*). *d*, ♂ *ad.* Lake Onega, July 26th, 1869 (*Meves*). *e*, ♂ *ad.* Archangel, July 14th, 1874. *f*, ♀ *ad.* Ujma, Archangel, May 20th, 1876. *g*, *juv.* Archangel, August 12th, 1875 (*Piottuch*).

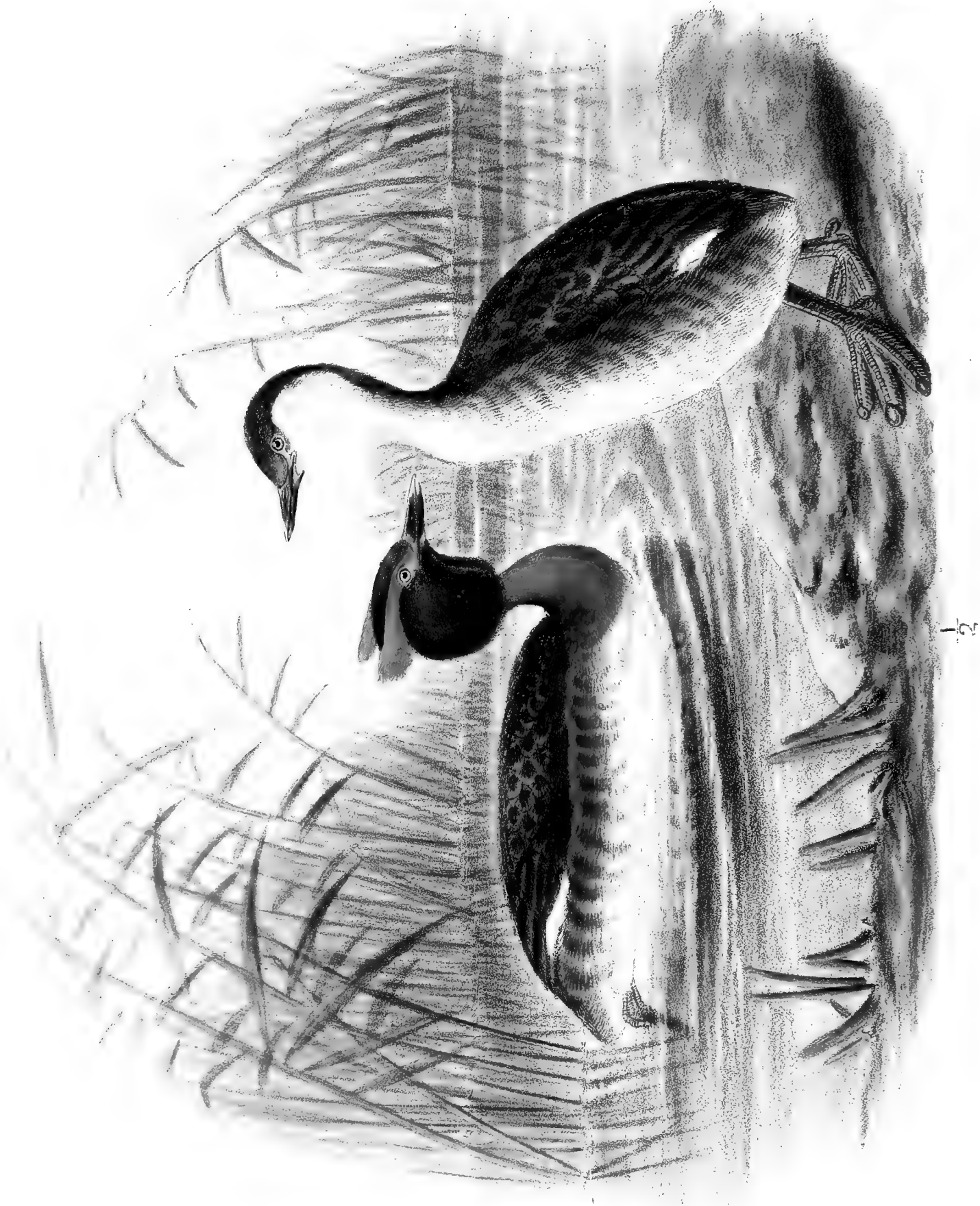
*E Mus. Brit. Reg.*

*a*, *ad.*, *b*, *juv.* West of Rocky Mountains (*J. K. Lord*). *c*, *ad.* Fort Simpson, June 2nd, 1878. *d*, *juv.* Howe Sound, British Columbia.

*E Mus. J. Zohrab.*

*a*, ♂, *b*, ♀, summer dress. Erzerroom.





Hart Lith

**HORNED GREBE.**  
PODICEPS AURITUS.

Neal Del

# PODICEPS AURITUS.

(SCLAVONIAN GREBE.)

*The Black and White Dobchick*, Edw. Nat. Hist. B. ii. p. 96, pl. 96. fig. 1 (1747).

*The Eared or Horned Dobchick*, Edw. Nat. Hist. B. iii. p. 145, pl. 145 (1750).

*Colymbus cristatus minor*, Briss. Orn. vi. p. 42, pl. iii. fig. 2 (1760).

*Colymbus cornutus minor*, Briss. tom. cit. p. 50 (1760).

*Colymbus auritus*, Linn. Syst. Nat. i. p. 222 (1766).

*Colymbus nigricans*, Scop. Ann. I. Hist. Nat. p. 77. no. 101 (1769).

*Le Grèbe d'Esclavonie*, D'Aubenton, Pl. Enl. 404. fig. 2 (1770).

*Le Petit Grèbe cornu*, Buff. Hist. Nat. Ois. viii. p. 237 (1772).

?*Colymbus duplicatus*, P. L. S. Müll. Natursyst. Suppl. p. 107 (1776).

?*Colymbus caspicus*, S. G. Gmel. Reise d. Russl. iv. p. 137 (1784).

*The Dusky Grebe*, Lath. Gen. Synop. iii. p. 286 (1785).

*Colymbus cristatus*, Mohr, Islandsk. Naturh. p. 39, pl. 2 (1786).

*Podiceps nigricans*, Lath. Gen. Synop. Suppl. p. 294 (1787).

*Colymbus cornutus*, Gmel. Syst. Nat. i. p. 591 (1788).

*Colymbus obscurus*, Gmel. tom. cit. p. 592 (1788).

*Podiceps obscurus*, Lath. Ind. Orn. ii. p. 782 (1790).

*Podiceps cornutus*, Lath. ut suprà (1790).

*Podiceps caspicus* (Gm.), Lath. tom. cit. p. 784 (1790).

*Podiceps arcticus*, Boie, Reise durch Norw. p. 308 (1822).

*Dytes*, Kaup (*Colymbus cornutus*, Gmel.), Natürl. Syst. p. 41 (1829).

*Podiceps ambiguus*, Less. Traité d'Orn. p. 595 (1831).

*Podiceps bicornis*, C. L. Brehm, Vög. Deutschl. p. 960, pl. 44. fig. 3 (1831).

*Podiceps auritus*, C. L. Brehm, tom. cit. p. 963 (1831).

*Podiceps sclavus*, Bp. Cat. Parzud. p. 13 (1856).

*Grèbe cornu*, French; *gehörnter Lappentaucher*, German; *Kuifduiker*, Dutch; *Hornet Lappedykker*, Danish; *Sevondt*, Færoese; *Flórgoði*, *Flóaskitur*, Icelandic; *Sortkravet Toplom*, Norwegian; *Svarthufvad Dopping*, Swedish; *Mustakulku-uiku*, Finnish.

## *Figuræ notabiles.*

Edwards, *l. c.*; D'Aubenton, Pl. Enl. 404. fig. 2; Werner, Atlas, *Pinnatipèdes*, p. 7; Kjærb. Orn. Dan. taf. 39; Fritsch, Vög. Eur. taf. 61. fig. 10; Naumann, Vög. Deutschl. taf. 244; Sundevall, Svensk. Fogl. pl. 54. figs. 4, 5, 6; Gould, B. of Eur. pl. 390; id. B. of G. Brit. v. pl. 40; Schlegel, Vog. Nederl. pl. 272; Audub. B. of Am. pl. 481.

♂ *ad. ptil. æst.* capite nigro, plumis elongatis tumidis, striam magnam per et pone oculos ductam formantibus, ferrugineis: corpore suprà sordidè nigricante vix cinereo tincto: remigibus secundariis brevioribus

albis, reliquis fuscis : jugulo ferrugineo : corpore subtùs albo, hypochondriis sordidè ferrugineis : rostro saturatè corneo, ad basin et in parte apicali pallidè carneo : iride rubrà : pedibus nigricanti-cinereis.

*Ad. ptil. hiem.* pileo, collo postico et corpore suprà fumoso-fuscis, dorsi plumis angustè schistaceo-cinereo marginatis : mento, faciei lateribus, gulâ et corpore subtùs argenteo-albis, hypochondriis fusco-cinereo lavatis.

*Adult Male in summer* (Greenland). Crown and forehead black ; lores and a broad band of feathers passing through the eye, and forming an elongated tuft on each side of the head, ochreous chestnut ; chin and the elongated feathers forming the ruff brownish black ; upper parts generally brownish black, tinged or marked with grey ; wings like the back, but the short secondaries almost entirely white ; entire neck in front rich chestnut-red ; flanks dull chestnut ; rest of the underparts silvery white ; bill dark horn, with the base and tip pink ; a narrow ring surrounding the pupil of the eye white, the outer ring crimson ; legs dull greyish black. Total length about 13 inches, culmen 1.1, wing 5.7, tarsus 1.8.

*Adult Female* (Ural). Resembles the male ; but the colours of the plumage are duller, the ruff shorter, and the rufous in the plumage paler than in the male.

*Adult in winter* (New Hampshire, 6th February). Crown, hind neck, and upper parts generally deep sooty brown, many of the dorsal feathers narrowly edged with slaty grey ; chin, sides of the head below the eye, throat, and underparts silvery white, the flanks tinged with brownish grey.

THE Horned or Slavonian Grebe is to be met with in much higher latitudes than the Eared Grebe, with which species it has been often confused. It is not unfrequently found in Great Britain during the winter months, and has been obtained here in full summer dress, but has not been known to breed with us. Yarrell records its occurrence in Cornwall, Devonshire, Sussex, Norfolk, Lincolnshire, Durham, Northumberland, and Glamorganshire. Mr. Mansel-Pleydell says that it frequently visits the coasts of Dorsetshire in winter, being more numerous in severe weather ; and Mr. Stevenson writes to me as follows :—"The Slavonian Grebe is apparently an annual visitant to our Norfolk coast in autumn and winter, specimens, both adult and immature, being obtained, almost every season, on Breydon or other brackish waters bordering the coast-line, as well as on the various freshwater broads of that neighbourhood, and our rivers, meres, and lakes more than twenty miles from the sea. From an examination of my notes for nearly thirty years, I find that the birds of this species which have come under my notice in the hands of our bird-stuffers have been procured, with but rare exceptions, between October and March, and in numbers, as regards each of those months, in about the following proportion—October one, November five, December one, January nine, February twelve, March four. The single exception of one in December, in so long a period, is somewhat singular. Unlike the Eared Grebe, this species seldom appears here in its breeding-plumage, these rarities occurring in April and May. A fine pair, in full nuptial dress, in my possession were killed on Sutton Broad on the 16th of April 1862. A young male in Mr. Gurney's collection was also shot at the same time, and a fourth, though wounded, escaped into the reeds. My adult male exactly resembles the bird figured by Yarrell from a specimen formerly in his possession, which was also shot on one of our Norfolk broads in May 1826. A description of the Sutton specimens, which I had the opportunity of dissecting at the time, will be found in the 'Zoologist' for 1862, p. 8092. Of

other examples met with in the nesting-season, I can recall only about four or five obtained in this county within the last twenty years; one of these, and the latest, was shot in the vicinity of Acle, near Yarmouth, on the 27th of August 1869, which, from the date, had most likely remained in that neighbourhood throughout the summer, and possibly nested there."

Mr. Cordeaux says (B. of Humb. Distr. p. 179):—"Excepting the little Dabchick, this is by far the most numerous of the Grebes visiting the Humber. It occurs in the autumn in small flocks, usually in the winter or 'Dusky-Grebe' plumage, and in some years is rather numerous on the river. My friend P. H. Seddon, Esq., informs me that in October 1869, when 'laid to' near the mouth of the Humber, during a dense fog, he saw several of these Grebes diving in the vicinity of his yacht. It has been sometimes obtained in the Norfolk broads in full breeding-dress. I have never, however, met with it in this district otherwise than in winter-plumage." Mr. Hancock says it is a not uncommon winter visitant to Northumberland and Durham, but he only once obtained an example there in summer dress. In Scotland it is by no means uncommon in the winter season, but leaves usually in April, though Mr. Robert Gray records, on the authority of Dr. J. A. Smith, the occurrence of a pair on the Loch of Killisport, Argyllshire, on the 20th June 1860. In the Shetland Isles it is said to be the commonest of Grebes. In Ireland, though a not uncommon winter visitant, it is less frequently met with than in England and Scotland. It has been met with in the southern portions of Greenland, but usually in immature plumage. In Iceland, however, it breeds regularly. Professor Newton says that it is very generally distributed on lakes throughout the western half, and probably throughout the whole of the island. It arrives about the same time as the Red-throated Diver, and, after breeding, leaves the island in the autumn. Mr. H. C. Müller speaks of it as being a common autumn visitant to the Færoes; but it does not breed there. In Scandinavia the Horned Grebe is said to be somewhat rare. Mr. Collett says that it breeds regularly in the northern districts of Norway, but is not common in the south, and only two instances of its occurrence in the Christiania fiord are on record. Pastor Sommerfelt speaks of it as being only an accidental visitant to the Varanger fiord; but it is said to breed in Enare.

According to Nilsson it is found throughout Sweden, but is everywhere rare. Malmén says that it breeds near Gothenberg; and Malm and Schrader met with it in East Finmark. In Finland it breeds in the interior, rarely in the south, but commonly in the northern districts; and Dr. Palmén enumerates many localities where it has been found nesting from the south of Finland up to Pudasjärvi. It arrives in Finland in May, and leaves in September or October.

In Russia the Horned Grebe is tolerably widely distributed. I have not seen it from any of the collections sent from Archangel; but it is said to occur near St. Petersburg and Moscow, and Meves saw one in the Ladoga canal. Sabanäeff says that it is commoner in the Ural than the Eared Grebe; but, according to Artzibascheff, it is rare on the Sarpa. In Poland and the Baltic Provinces this Grebe is tolerably rare during the two seasons of passage; and it is stated by Borggreve to be a rare visitant to North Germany during the same seasons and in the winter.

It occurs on the coasts of Denmark in the spring and autumn, and also on the larger sheets of fresh water; but only a few remain over the summer. Steenstrup found its nest in July 1834 on the Nors and Nebel lakes, in Thy; and Dr. Collin obtained a pair from a little lake on Mors, where it said to have bred for ten years. Mr. Benzon informs me that it appears to be more

numerous in Denmark now than it used formerly to be; and last year (1878) he met with it in almost every small lake within five or six English miles of Copenhagen. The Horned Grebe visits Holland pretty regularly during the two seasons of passage, but never breeds there; it is said, however, to be only an accidental visitant to the marshes of Flanders and the Scheldt; and Hollandre cites two occurrences on the Moselle. In France it is also very rare, especially in the southern provinces; and throughout the Mediterranean subregion the Horned Grebe is an uncommon straggler. Colonel Irby states that he saw one which was obtained in the Straits of Gibraltar in October 1867; and he adds that he believes it may often be met with there in winter.

In Savoy the Horned Grebe is of accidental occurrence in the cold season; and in Italy it has but rarely been obtained—only in the northern provinces in winter. It is said to have been taken on Lake Lentini, in Sicily; but it appears doubtful whether the bird was really this species or *Podiceps nigricollis*. Mr. C. A. Wright informs me that it has never occurred in Malta, and that *Podiceps nigricollis* only has been obtained there. In Southern Germany this Grebe appears to be rarer than the Eared Grebe. Dr. Fritsch says (J. f. O. 1872, p. 378) that, “according to Haring, one is said to have been taken near Carlsbad as early as 1838. About ten years ago Baron Neuberg obtained an old pair near Melnik. At the end of March 1869 Mr. Hofmann killed several specimens at the same time with *Podiceps nigricollis*. Mr. Lokaj received a male from Königgrätz; and another is in the collection at the Gymnasium of that place. In several collections I have found young examples marked as *Podiceps nigricollis*. The pair killed near Melnik agreed in colouring more with the northern species described as *Podiceps arcticus*.” Messrs. Danford and Harvie-Brown found it common in the Mezöség, Transylvania, but add that it is said to be rare in other parts of the country. It appears, however, to be, as a rule, only a straggler to the countries skirting the Lower Danube and to Turkey; and Dr. Krüper does not include it as occurring in Greece.

In Southern Russia it is said to be of accidental occurrence, and much rarer than the Eared Grebe; and I do not find it recorded from Asia Minor, Palestine, or North-east Africa. Loche says that it is common and breeds in Algeria; but he must doubtless mean the Eared Grebe, and not the present species, as it appears doubtful if the true *Podiceps auritus* has ever been obtained in Africa.

In Asia the Horned Grebe is found right across the continent to Japan, but, as in Europe, it does not range very far south. Major St. John found it numerous on the Kazrun lake, in Persia, in winter; and Severtzoff records it as being common in Turkestan on passage, adding that it is said to breed on Lake Son-kul; but it does not range as far south as India. It is found in Siberia; for Von Middendorff obtained a female at Udskoj Ostrog, on the 21st May; Mr. Maack shot one on the 3rd June on a small lake near the confluence of the Schilka and the Argun; and Dr. Radde procured an old male near Tunka on the 13th (25th) May 1859. Mr. Swinhoe obtained one at Amoy, in China; and, according to Mr. Whitely, one was shot in Hakodadi harbour, Japan, in January 1865.

In North America the Horned Grebe is tolerably abundant, breeding in British North America and in the northern portions of the United States. I have met with it in New Brunswick; and Mr. Merrian says that it is a common winter resident in Connecticut, arriving

in September and October, and leaving in May. According to Dr. E. Coues (B. of N.W. p. 732), "this species is much more abundant and generally dispersed in winter in the United States than either of the two larger ones, and it also nests within our limits. I found it breeding at various points in Northern Dakota, as along the Red River, in the prairie sloughs, with Coots, Phalaropes, and various Ducks, and in pools about the base of Turtle Mountain in company with *P. californicus* and the Dabchick. I took fresh eggs on the 20th June at Pembina, finding them scattered on a soaking bed of decayed reeds, as they had doubtless been disturbed by the hasty movements of the parents on quitting the nest; there were only four; probably more would have been laid. They are elliptical in shape, with little or no difference in colour at either end—dull whitish with a very faint shade, quite smooth, and measure about 1.70 by 1.20. On Turtle Mountain, late in July, I procured newly hatched young, swimming with their parents in the various pools. At this early stage the neck is striped as in the common Dabchick. Later in the season, during the migration, the Horned Grebes were numerous all along the Souris or Mouse River, in company with an equal or even greater number of Eared Grebes, nearly all of both species being the young of the year."

In habits the Horned Grebe does not appreciably differ from its ally the Eared Grebe; but it is said to take wing more readily than that bird, and is scarcely so shy. Speaking of its habits as observed by him in Scotland, Mr. Robert Gray says (B. of W. of Scotl. p. 407):—"The habits of this lively species may be best studied in spring, just about the time when it collects in pairs before emigrating. In many of our western sea-lochs it is very conspicuous at this season; and on calm evenings, when the water is motionless and burnished in the slanting sunlight, delighting the eye with a series of coloured cloud-pictures as the daylight recedes, the ear at once catches the comical call-notes of these interesting birds holding their punch-and-judy conferences. Far off, at almost a mile's distance, the little specks may be distinctly traced on the unruffled loch shifting in circles and chasing each other, accompanying all their gambols with their shrill intercourse about their future movements. Writing from Ardrishaig, Mr. Graham says, 'Last year I observed this bird here in March. A considerable number remained in the loch during the last week of the month, bad weather having retarded their progress. Although going in small parties, they had evidently paired, the couples keeping close together, so close, indeed, that I got two specimens at one shot. They were in full summer dress; and a very striking and beautiful combination it is of buff, black, and white, the largely developed horns of orange plumes being a very attractive feature, and adding very much to the quaint appearance of the birds. The iris is of a rich ruby-red, with an extremely fine exterior thread of white running round it.' Sometimes their appearance in Loch Fyne is delayed two or three weeks, according to the weather. They remain generally until the last week of April." In Shetland, Dr. Saxby says, where it is the commonest of the Grebes, "it arrives in very small numbers in October, leaves after a few days, and reappears about April, when it makes a longer stay of a few weeks. It is occasionally seen upon fresh water, but seems to prefer some quiet inlet of the sea, where it can dive undisturbed among the rocks and floating weeds; but for what purpose it is difficult to say, seeing that when the bird is shot after having been thus engaged for a considerable time, the stomach merely contains vegetable fibres, sand, or feathers. In opening this bird I have usually perceived a peculiar odour, resembling that of the bruised plant of *Iris fetidissima*. It

is very shy and watchful, and is capable of remaining submerged for more than a minute at a time. As it usually dives when threatened with danger, I was not a little surprised when on one being fired at by a lad who was lying concealed among the rocks, it merely swam away from the spot, not diving until it had proceeded about sixty yards. I also was concealed at the time, and observed, by means of a telescope, that the bird did nothing more than start slightly and quicken its pace as the shot fell around it. On escaping a shot by diving, if the water be deep, it swims for a considerable distance beneath the surface, and on emerging either dives again or immediately takes wing. In shallow water, however, when the weeds interfere with its progress, it remains beneath for a very short time, and then rises on the wing. Those which are seen in May (and they sometimes remain until the end of that month) are nearly always pairs; and then, instead of industriously diving among the shallow bays and inlets, they idle away their time in deep water. I have seen them swimming about the middle of the voe at Balta Sound for nearly a whole day without once showing any sign of searching for food."

The nest of the Horned Grebe, like that of its allies, is a mere mass of aquatic herbage floating on the water, and generally so low in the water that the eggs are always wet. When the old bird leaves the nest, she always covers her eggs with some of the wet herbage of which the nest is composed.

Mr. Proctor, who met with this bird in Iceland, says that it "frequents the fresh waters, and breeds amidst the reeds and other rank herbage. The nest is large, and floats on the surface of the water, with which it rises and falls. It is composed of a mass of reeds and other aquatic plants. The eggs vary in number from two to four, and when just laid are of a bluish white; but they soon become stained by the materials of which the nest is composed. The size of the egg is one inch and three quarters long by one inch and a quarter in breadth. The young birds when first hatched are covered with grey-coloured down. No sooner does the old bird perceive danger from any intruder than she instantly dives, and emerges at thirty or forty yards' distance. One day during my sojourn in Iceland, having observed one of these birds dive from its nest, I placed myself with my gun at my shoulder, waiting its reappearance, as soon as it emerged I fired and killed it, and was surprised to see two young ones (which, it seems, had been concealed beneath the wings of the parent bird) drop upon the water. I afterwards shot several other birds of this species, all of which dived with their young under their wings. The young were placed with their heads towards the tail, and their bills resting on the back of the parent bird."

I have several eggs of the Horned Grebe from Iceland, which resemble those of the Eared Grebe, except that they are a trifle larger in size.

The specimens figured are the adult male in summer plumage and the adult winter bird above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a*, ♂ *ad.* Greenland, summer (*Möschler*). *b*, ♀ *ad.* Ural, June 21st (O. S.), 1863 (*Sabanäeff*). *c*, ♀ *ad.* New Hampshire, U. S., February 6th, 1861 (*E. Coues*). *d*, ♂. Point Lepreaux, Bay of Fundy, December (*H. E. D.*).

*E Mus. H. B. Tristram.*

*a*, ♂. Stromness, Orkneys, July 1852 (*T. Benn*). *b*, *c*. Iceland, 1862 (*W. Procter*).





Neal Del

EARED GREBE.  
PODICEPS NIGRICOLLIS

Hart Lith

# PODICEPS NIGRICOLLIS.

(EARED GREBE.)

*The Eared Dobchick*, Edw. Nat. Hist. B. ii. p. 96, pl. 96 (1747).

*Colymbus auritus*, Briss. Orn. vi. p. 54 (1760).

*Colymbus auritus*, var.  $\beta$ , Linn. Syst. Nat. i. p. 223 (1766).

*Podiceps auritus*, Lath. Ind. Orn. ii. p. 780 (1790, nec Linn.).

*Colymbus auritus*, Donovan, Nat. Hist. Brit. B. ii. pl. 29 (1799, nec Linn.).

*Podiceps nigricollis*, C. L. Brehm, Vög. Deutschl. p. 963 (1831).

*Podiceps orientalis*, C. L. Brehm, Vogelfang, p. 402 (1855).

*Podiceps recurvirostris*, C. L. Brehm, Vogelfang, p. 402 (1855).

*Grêbe oreillard*, French; *Mergulhão*, Portuguese; *Svasso piccolo*, Italian; *Blongiun-sekond*, Maltese; *geöhrter Steissfuss*, *Ohrentaucher*, German; *de Geoorde-Fuut*, Dutch; *Öret-Lappedykker*, Danish; *Svarthalsad Dopping*, Swedish; *Ouchastaïa-Gagara*, Russian.

## *Figuræ notabiles.*

Edwards, *l. c.*; Werner, Atlas, *Pinnatipèdes*, pl. 8; Kjærb. Orn. Dan. taf. 39, Suppl. taf. 19; Fritsch, Vög. Eur. taf. 61. figs. 7, 8; Naumann, Vög. Deutschl. taf. 246; Sundevall, Svensk. Fogl. pl. 80. fig. 1; Gould, B. of Eur. pl. 391; id. B. of G. Brit. v. pl. 41; Schlegel, Vog. Nederl. pl. 273; Donovan, Brit. Birds, ii. pl. xxix.

*Ad. ptil. æst.* capite, collo toto et corpore suprâ nigris, striâ pone oculos aurantiacâ et ferrugineâ: remigibus primariis griseo-nigris, intimis albo apicatis: secundariis albis, intimis griseo-nigris: pectore et abdomine albis, crisso fumoso-nigro: hypochondriis ferrugineis: rostro compresso, acuto, mandibulâ recurvatâ, nigro, ad basin rubro: iride rubrâ: pedibus olivaceo-nigricantibus.

*Ad. ptil. hiem.* pileo, collo postico et corpore subtùs sordidè nigricantibus: gulâ, gutture et corpore subtùs albis, gutture griseo-nigro notato: hypochondriis fumoso-nigro lavatis.

*Adult in summer* (Sarepta, May). Head, entire neck, and upper parts generally black; a broad stripe from the eye and covering the auriculars golden yellow, becoming red on the lower part; lores black like the rest of the head; primaries, inner secondaries, and wing-coverts greyish black, the sixth quill tipped with white, the seventh and following ones more broadly marked with white, the short secondaries being pure white; underparts silvery white, the lower abdomen greyish black, the flanks rich fox-red; bill black, reddish at the base; iris bright red; legs dull greenish black. Total length about 12 inches, culmen 0.92, wing 4.9, tarsus 1.6.

*Adult in winter* (Malta). Crown, hind neck, and upper parts dull black with a greyish tinge, the golden-yellow stripe behind the eye wanting; sides of the head greyish black slightly tinged with whitish grey; chin, throat, and underparts white, the lower throat tinged with blackish grey, flanks tinged with grey.

*Young in down* (Volga).—Head and neck blackish, clearly striped with white; upper parts sooty blackish with indistinct stripes along the back; flanks and crissum sooty blackish, rest of the underparts white.

THIS Grebe and the Horned Grebe (the Slavonian Grebe of many authors) have been so frequently mistaken for each other that it is by no means easy to define their respective ranges. The present species, however, has a much more southerly range, especially during the breeding-season, than *Podiceps auritus*, which only breeds in the extreme north, whereas the Eared Grebe nests frequently in Southern Europe and North Africa, and is met with as far east as Japan.

In Great Britain *Podiceps nigricollis* is a somewhat rare straggler, but has been met with tolerably often in different parts of the country, usually in immature or winter dress. Edwards figured one, obtained at Hampstead; and it has been more than once killed on Kingsbury reservoir. Montagu records it from Cornwall; Lord Clifton shot a fine specimen, which had the ear-tufts well developed, off the Chesil bank, in the Bay of Portland, in April 1876; it has been obtained in Dorsetshire and Sussex (*vide* Yarrell); and Mr. Cecil Smith informs me that he procured one in full plumage in Somersetshire, which he kept alive for a short time. It has been recorded from Suffolk; and I am indebted to Mr. Stevenson for the following notes on its occurrence in Norfolk:—"The habits of this species in Norfolk appear to be almost exactly the reverse of the Slavonian Grebe, being frequently obtained in its summer plumage during April and May, but rarely met with in its winter dress; indeed the only records of its occurrence at the latter season in my notes for the last five-and-twenty years, are a single bird shot at Lynn in November 1857, and a specimen seen by Mr. J. H. Gurney, jun., in Leadenhall Market on the 18th September 1867, which was said to have come from Norfolk. Messrs. Gurney and Fisher, writing in 1846, observe, 'In the month of April last no less than five specimens of the Eared Grebe were killed, within a week, at Wroxham and other places in the county; and it is somewhat remarkable that these have all proved, on dissection, to be male birds.' A fine specimen in full breeding-plumage was shot at Sutton in April 1849; and in the 'Zoologist' for 1851 (pp. 3116, 3175) I find two notices of Eared Grebes, from the neighbourhood of Yarmouth, being purchased in the London markets. The first, killed on the 14th of April of that year, was sent up to London with some Crested Grebes; and a fine male and female, shot on the 17th, were purchased by a London dealer, who also received another pair in May 1852 from the same locality; and the females in both instances contained eggs about the size of small marbles. On the 9th of March 1853, a bird assuming its summer plumage was shot at Blakeney, and is now in Lord Leicester's collection at Holkham. In 1854, about the 18th of May, a very beautiful specimen was shot at either Burgh or Filby, near Yarmouth, now in the possession of the Rev. C. Lucas; and about the same time another, in the collection of the late Mr. Clough Newcome, of Feltwell, was killed in Hockwold Fen. In 1861 a pair assuming summer plumage was shot on the lake at Kimberley, near Wymondham, on the 30th of March; and on the 24th of April of the same year, a perfect example at Martham, and one, in half change, on Hickling Broad, both localities near Yarmouth. The following summer was, however, even more remarkable for the number of these birds obtained in full summer plumage. About the 1st of May in that year (1862, not 1863 as stated in Gould's 'Birds of Great Britain') a single bird was shot at

Rollesby, and on the 6th and 7th of the same month two pairs in full nuptial plumage were shot on Horsey mere, near Yarmouth, where, from Mr. Rising's account, they had been remarked at various times throughout the winter, but were mistaken for Dabchicks in their winter dress. They were exceedingly tame, and, from their long sojourn on the same piece of water, would probably have bred there. One of the females is said to have contained a considerable number of eggs. Again, on the 30th of May, I dissected a fine male in brilliant plumage, shot a day or two before at either Burgh or Ormesby, near Yarmouth; and with this bird was another, most probably a female, which, being only winged, escaped into the reeds. The stomach of the male contained the remains of water-beetles and the debris of water-plants, with a mass of feathers, as is so often the case with the Slavonian, apparently from the bird's own breast, and stained green with its food. A specimen in my own collection, in part change to summer plumage, was killed on Breydon, near Yarmouth, on the 12th of April 1865; and, with the exception of the one before mentioned as occurring in Leadenhall Market in December 1867, this is the last entry in my note-book of this species in Norfolk." To this I may add that Mr. E. Bidwell informs me that when in Ipswich a short time ago he saw an Eared Grebe in full summer dress that was shot by Captain Shilling, late in August this year, on the Orwell, near Ipswich. Mr. Cordeaux speaks of it as being of very rare occurrence in the Humber district; and Mr. Hancock states that it is a rare winter visitant to Durham and Northumberland, and he possesses several specimens all either in immature or winter dress.

Mr. Robert Gray speaks of it (B. of W. of Scotl. p. 409) as being of uncommon occurrence in Western Scotland, where it is sparingly distributed. He possesses one in full breeding-dress, shot on Loch Sunart in the spring of 1866, and adds that he has known it as a visitant to the coasts of East Lothian since 1846, and examined five specimens obtained near Dunbar in the winter of 1864. It has been shot on the Nith, in Dumfriesshire, and is recorded by Mr. Patrick Neill as occurring in Mid Lothian. Mr. J. H. Baikie killed one at Kirkwall in October 1852; and it is found in the Outer Hebrides, as a specimen was sent to Macgillivray from North Uist.

In Ireland it is not often seen during the winter. Thompson says (B. of Irel. iii. p. 189) that one was shot in January or February 1835 in Belfast Bay, and two were killed in the same locality in November 1846. Several were sent to Mr. Glennon from county Wexford in February 1838; and an immature example was obtained at Muskerry, county Cork, in 1847. Two have been procured in full summer dress, one of which, shot near Dublin on the 15th June 1847, is in the collection of Mr. Watters, and the other, which was killed early in June 1849 near Benburb, Armagh, is in the possession of the Rev. George Robinson, of Tartaraghan rectory, county Armagh.

The Eared Grebe has not been met with in Greenland, Iceland, or the Færoes, and is but rare in most parts of Scandinavia. Mr. Collett only cites one instance of its occurrence in Norway, viz. one shot in the fiord off Tvedestrand in the winter of 1863-64; but Nilsson says that it occurs on the islands off the coast of Sweden in the Baltic as far north as Upland. In Finland it is a very rare straggler; for Dr. Palmén only knows of one pair having been killed there, at Willinge, near Helsingfors, in 1853, the female of which is in the Finnish collection in that town.

In Russia the Eared Grebe is common in the central and southern districts, but becomes

rare towards the north. I have received many specimens from the Volga; and it is stated to breed commonly on the Sarpa. Mr. Taczanowski informs me that it is more numerous than the Horned Grebe in Poland during the season of passage, and a few remain to breed on some of the lakes. In North Germany this Grebe is not only seen on migration but it breeds regularly in many portions of that country. Von Homeyer (J. f. O. 1870, p. 231) states, on the authority of Dr. Gloger, that it breeds not uncommonly in Silesia, and he himself found it nesting near Breslau in 1867; and Mr. Herman Schalow writes (J. f. O. 1876, p. 4) that it is generally distributed during the breeding-season throughout Brandenburg, being most numerous in South-eastern Lausitz. Mr. Collin states (Skand. Fugl. p. 722) that it has not been proved to occur in Denmark proper; but Mr. Benzon, in a letter just received, informs me that it does certainly breed there, but has been overlooked or mistaken for the Horned Grebe. "It breeds regularly," he writes, "in Thy, in North-western Jutland. I have, with Dr. Hejberg, received from the Koldskjör lake, in that district, in May 1876, two clutches of five eggs, and on the 4th June, 1878, three of three and one of four eggs. On the 31st May 1878 one clutch of four and one of five eggs were taken in Norssö, and four or five nests, containing from two to five eggs, at the Torme lake." A male was sent alive by Dr. Hejberg to the Copenhagen Zoological Gardens, where it lived some time; and its skin is now in Mr. Benzon's collection. It is only met with occasionally during migration in Holland and Belgium, not remaining to breed in either of those countries. Up the Rhine it appears to be of more frequent occurrence; and Mr. Schütt speaks of it as not being rare on the Bodensee. He shot an old male in full breeding-dress at the mouth of the river Aach on the 25th April 1855. In the north of France it is met with regularly, though sparingly, whereas in the southern portions of that country it is abundant in some localities, and breeds in the marshes near Nîmes and other places.

According to Professor Barboza du Bocage it is common in some parts of Portugal; and in Spain, Colonel Irby writes (Orn. Str. Gibr. p. 220), "*Podiceps nigricollis* is the most common of the Grebes, breeding in lagoons and swamps on both sides of the Straits. In the winter they take to the salt water, and are generally plentiful in Gibraltar Bay."

Passing eastward, again, I find this Grebe recorded as being tolerably common in winter in Savoy, except during severe seasons; and it has been known to nest in the marshes of the Rhône and the Isère. In Italy it is generally distributed, nesting in great numbers in the marshes of Tuscany, and possibly in those of Venetia and Lombardy. Doderlein says that it breeds frequently in the marshes of Catania, Syracuse, and Terranova, but it is not common in other parts of Sicily. According to Mr. A. B. Brooke it is extremely numerous in Sardinia in winter, remaining until late in March, when nearly all leave; and he is not sure if any remain to breed there. Mr. C. Bygrave Wharton (Ibis, 1876, p. 29) noticed a few on the lakes on the east coast of Corsica in March, but none in April; and Lord Lilford informs me that he saw large numbers in Corsica and Sardinia. In Malta it is met with in winter, but is not common. In Southern Germany it breeds in many localities, but does not appear to be common anywhere. Dr. Anton Fritsch says (J. f. O. 1872, p. 378) that a few breed in Bohemia, but, according to Palliardi, flocks of twenty pairs are seen there. Messrs. Danford and Harvie-Brown say (Ibis, 1875, p. 434) that it is of not unfrequent occurrence in some parts of Transylvania; and it is said to be numerous on the Southern Danube and on the coasts of Turkey. According to Dr. Krüper it is tolerably

common in Greece in winter, and winters also in the Cyclades; and Lord Lilford informs me that he found it very numerous on the lakes and lagoons of Epirus, and believes that a few may breed at the head of the Lake of Butrinto.

It doubtless occurs in Asia Minor; but I have no data respecting its range there. Canon Tristram, however, met with it in great numbers in Palestine, and says that it breeds in the marshes of Merom.

In North-east Africa it is not very common. Von Heuglin says it is found sparingly in winter in the lagoons of Lower Egypt, on the bitter lakes, and near Suez. Early in May he shot a pair in full summer plumage near Tamieh, in the Fayoom; and it breeds, he adds, near Ben-Ghazi. Mr. Blanford met with it on Lake Ashangi, in Abyssinia, where, he states, it was not very common.

In North-western Africa, however, this Grebe is much more numerous. It breeds commonly in Algeria. Lord Lilford met with it in Tunis; and it probably occurs in Tangier, though it is not included in M. Favier's list.

It is even found, though in most places only as a rare straggler, in South Africa. Mr. C. J. Andersson met with it at Walwich Bay; and one was sent (*Ibis*, 1868, p. 263) by Mr. Ayres from the Transvaal. Mr. Layard, however, has found it breeding commonly in South Africa. This gentleman writes (*B. of S. Afr.* p. 374) as follows:—"The Eared Grebe was unknown to me as an inhabitant of South Africa until the year 1859, when, having an opportunity of visiting Vogel Vley, in the Wellington district, I found it breeding in considerable numbers amid the rushes that border portions of that lake. Each pair seemed to keep guard over its special province, and never to stray to any distance from the haunt. The nest was constructed of sedge, and was a large compact structure; the eggs, four or five in number, are chalky white." According to Mr. Gurney (*Ibis*, 1868, p. 263) specimens from South Africa differ from the ordinary European bird in being rather smaller in size, and in having a shorter bill and paler ear-tufts.

In Asia the Eared Grebe is found right across the continent to Japan. According to Dr. Severtzoff it is rare on passage in Turkestan; and Mr. A. O. Hume, who obtained it on the Baluchistan coast, writes (*Stray Feathers*, i. p. 266):—"This species is not uncommon about the mouths of the Indus, and along the Sindh and Mekran coasts as far, at any rate, as Gwader. I saw specimens just outside the Kurrachee harbour, beyond the Oyster-rocks, but failed to procure any there. They were most common at Soomeeanee Bay, just at the boundaries of Khelat and Sindh; and it was there that I procured most of my specimens. Like all Grebes these birds depend for safety on their extraordinary diving powers, and after one or two shots have been fired they never dream of flying when any boat is at all near them. On the other hand, before they have been disturbed, I noticed them flying about, more than I have ever seen any other Grebe do. On two or three occasions I noticed them spontaneously taking flights of fully a quarter of a mile, three or four together flying low, and very rapidly; and at Gwader I noticed a single bird flying pretty high across the strip of sand that divides the eastern and the western bays, and on which the town is built.

"None of my specimens were in full breeding-plumage; the most advanced, a male, though furnished with the long silky orange-red tuft behind the eye, still exhibited a white speckling on the chin and throat, and only bore the faintest trace of the rufous striation which is said to

characterize the sides and flanks in summer; but as my specimens were all procured in February, this was only to be expected." I do not find it recorded from elsewhere in India, nor does it appear to inhabit Siberia; but Père David met with it at Peking, where it is rarer than the Little Grebe; Mr. Swinhoe states that it frequently occurs at Amoy in winter; and it has been recorded by Mr. Swinhoe, Captain Blakiston, and Mr. Whitely from Japan, where examples have been obtained both in winter and in summer dress.

In America the present species is replaced by a very closely allied but fairly separable form, *Podiceps californicus*, Heerm. (Proc. Phil. Acad. 1854, p. 179), which differs in having the twelve outer quills black as well as the inner secondaries, whereas in *Podiceps nigricollis* the sixth quill is marked with white, each succeeding one having more white, the short secondaries being pure white.

In habits this Grebe does not differ much from the Horned Grebe and the Little Grebe; and, like these, it is essentially an aquatic species, and passes most of its time swimming and diving, in both of which it excels greatly. It is very shy and difficult of approach; but when danger threatens it will not take wing, but seeks safety by diving and hiding amongst the aquatic herbage. When close pressed it will hide under the water near the shore, keeping only its beak and the upper part of its head above the surface, and is then not easily discovered. During the breeding-season, and also on passage, it is usually met with on inland sheets of water which are overgrown with aquatic herbage; but in winter it resorts to the sea-coasts. Its food consists of small fish, frogs, aquatic insects of various kinds, &c. &c., which it usually procures by diving; but the insects are often picked off the leaves and stems of the water-plants. Although it is seldom seen on dry land, it walks easily in an erect position, and can even run, though not very swiftly.

It breeds on inland lakes and ponds, selecting those where it can conceal itself in case of need, and makes a clumsy bulky nest like the larger Grebes; but it places it either on a wet tussock or else amongst denser herbage than they do, and it is seldom found floating free on the water. Mr. Benzon informs me that, according to Dr. Hejberg, nests obtained in Denmark were not floating amongst the rushes, but were on tussocks on the edges of the lake, though in places where the water close to the edge of the nest was deep and clear. The nests were chiefly made of moss; and when the female left the nest she covered her eggs with the moss. In Southern Europe and North Africa the nests are said to be frequently placed amongst those of other marsh-breeding species; and Herr von Homeyer found many nests on Lake Halloula, in Algeria, amongst those of the Whiskered Tern. The eggs of the Grebes were always covered with rotten rushes and reeds, which, from fermentation, generated a considerable amount of heat; and thereby incubation continued even during a prolonged absence of the parent bird.

The eggs, four or five in number, are yellowish white, with a faint greenish tinge, the shell being covered with a chalky substance. When fresh laid they are clean; but, from contact with the fermenting mass of herbage of which the nest is constructed, they soon become soiled, and I have seen them stained dark brown. Those in my collection vary from  $1\frac{2}{40}$  by  $1\frac{5}{40}$  to  $1\frac{2}{40}$  by  $1\frac{8}{40}$  inch in size, and are rather elongated oval in shape.

Both parents incubate; and should one be killed during the time of incubation, the other will continue sitting and will rear the young.

As a rule, this Grebe is a silent bird rather than otherwise; its call-note, which is usually heard at its breeding-place, or when they collect together before migrating, is a soft, clear whistling sound, resembling the syllables *bib bib*; and during the pairing-season it utters a clear and very distinct cry, like the syllables *bide wide wide wide wide* quickly emitted. This note or love-song is usually heard in the evening or during the fine summer nights.

The specimens figured are an adult male in full breeding-dress and an old bird in winter.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

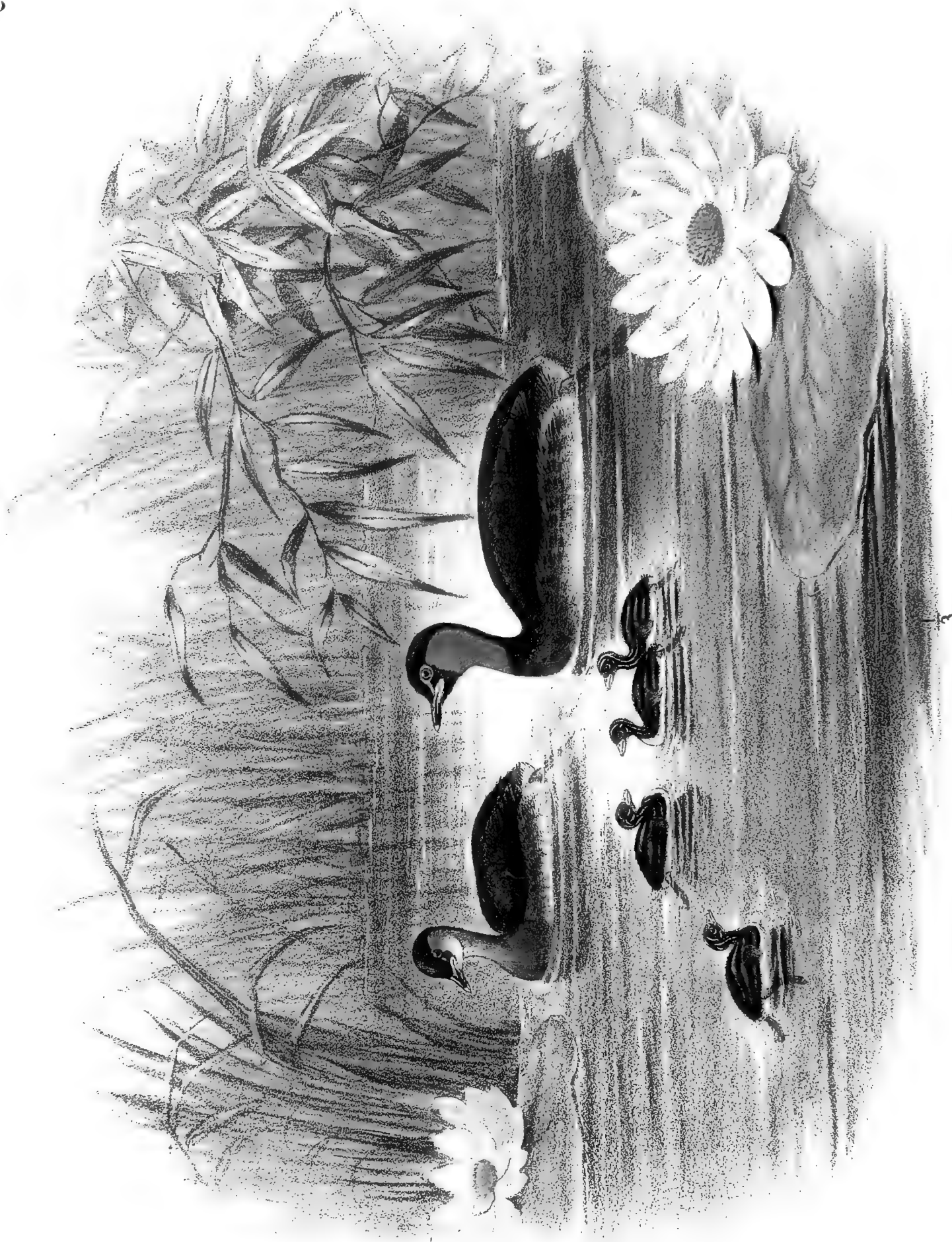
*a*, ♂, *b*, ♀, *c*, *pull.* Sarepta, Volga, May (*H. F. Müschler*). *d*, *ad. ptil. hiem.* Southern Europe.

*E Mus. C. A. Wright.*

*a*. Spain, 1872 (*W. H. Paul*). *b*. Malta, September 1858. *c*, *d*, ♀. Malta, August and December 1874. *e*, *juv.* Malta, winter (*C. A. W.*).







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LITTLE GREBE.  
PODICEPS FLUVIATILIS.

# PODICEPS FLUVIATILIS.

(LITTLE GREBE.)

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- Colymbus minor*, Briss. Orn. vi. p. 56 (1760).  
*Colymbus fluviatilis*, Briss. tom. cit. p. 59 (1760).  
*Colymbus fluviatilis nigricans*, Briss. tom. cit. p. 62 (1760).  
*Colymbus auritus*, var.  $\gamma$ , Linn. Syst. Nat. i. p. 223 (1766).  
*Colymbus fluviatilis*, Tunstall, Orn. Brit. p. 3 (1771, ex Briss.).  
*Le castagneux*, Buff. Hist. Nat. Ois. viii. p. 244, pl. xx. (1781).  
*Le castagneux des Philipines*, Buff. tom. cit. p. 246 (1781).  
*Colymbus pyrenaicus*, Lapeir. K. Vet. Ak. Nya Handl. iii. p. 111 (1782).  
*Little Grebe*, Lath. Gen. Syn. iii. p. 289 (1785).  
*Blackchin Grebe*, tom. cit. p. 292 (1785).  
*Podiceps minutus*, Lath. Gen. Synopsis, Suppl. p. 294 (1787).  
*Podiceps hebridialis*, Lath. ut suprà (1787).  
*Colymbus minor*, Gmel. Syst. Nat. i. p. 591 (1788).  
*Colymbus hebridicus*, Gmel. tom. cit. p. 594 (1788).  
*Podiceps minor* (Gmel.), Lath. Ind. Orn. ii. p. 784 (1790).  
*Colymbus philippensis*, Bonnat. Tabl. encycl. et méth. i. p. 58, pl. 46. fig. 3 (1790).  
*Colymbus minutus* (Lath.), Pall. Zoogr. Rosso-As. ii. p. 358 (1811).  
*Podiceps novæ Hollandiæ*, Steph. in Shaw's Gen. Zool. pt. 1, pl. 18 (1826).  
*Podiceps hebricidus*, C. L. Brehm, Vög. Deutschl. p. 964 (1831).  
*Podiceps pygmæus*, C. L. Brehm, op. cit. p. 966 (1831).  
*Podiceps gularis*, Gould, P. Z. S. 1836, p. 145.  
*Sylbeocyclus minor* (Gmel.), Bp. Comp. List, p. 64 (1838).  
*Podiceps noctivagus*, Temm. Tabl. méth. p. 100 (1839, ex Pl. Col. 945).  
*Sylbeocyclus europæus*, Macg. Man. B. Orn. ii. p. 205 (1842).  
*Podiceps philippensis* (Bonn.), G. R. Gray, Cat. Mamm. & B. of Nepal, p. 147 (1846).  
*Tachybaptus*, Reichenb. (*Podiceps minor*, Gm.), Av. Syst. Nat. *Natatores*, pl. 2 (1849).  
*Podiceps pallidus*, C. L. Brehm, Vogelfang, p. 403 (1855).  
? *Podiceps habrycidus*, C. L. Brehm, Naumannia, 1855, p. 300.  
*Tachybaptus minor* (Gm.), Bp. Compt. Rend. xlii. p. 775 (1857).  
*Tachybaptus philippensis* (Bonn.), Bp. ut suprà (1857).  
*Tachybaptus capensis*, Bp. ut suprà (1857).  
*Tachybaptus gularis* (Gould), Bp. ut suprà (1857).  
*Podiceps (Sylbeocyclus) tricolor*, G. R. Gray, P. Z. S. 1860, p. 366.  
*Podiceps fluviatilis* (Tunst.), Degl. & Gerbe, Orn. Eur. ii. p. 587 (1867).  
  
*Dabchick*, *Little Grebe*, English; *Spagaire tuinne*, *Goblachan uisge*, Gaelic; *Le Castagneux*,

French; *Mergulhão*, Portuguese; *Tuffetto*, Italian; *Blonguin terz*, Maltese; *El-ghotis*, Moorish; *kleiner Steissfuss*, *kleiner Lappentaucher*, German; *de Dodaars*, Dutch; *Lille-Lappedykker*, *Dværg-Lappedykker*, Danish; *Liden-Lappedykker*, Norwegian; *Smådopping*, Swedish.

*Figuræ notabiles.*

D'Aubenton, Pl. Enl. 905, 945; Werner, Atlas, *Pinnatipèdes*, pl. 9; Kjærb. Orn. Dan. taf. 39, Suppl. taf. 19; Frisch, Vög. Deutschl. taf. 184; Fritsch, Vög. Eur. taf. 61. figs. 12, 13; Naumann, Vög. Deutschl. taf. 247; Sundevall, Svensk. Fogl. pl. 54. fig. 7; Gould, B. of Eur. pl. 392; id. B. of G. Brit. v. pl. 42; id. B. of Australia, vii. pl. 81; Schlegel, Vog. Nederl. pl. 274.

♂ *ad. ptil. æst.* pileo, nuchâ, collo postico, mento et loris nigricanti-fuscis: capitis lateribus, gulâ et gutture castaneo-rufis: corpore suprâ nigricante vix griseo tincto: remigibus primariis saturatè cinereis, secundariis albis extûs cinereo notatis: pectore et hypochondriis nigricanti-griseis: corpore reliquo subtûs argenteo-griseis: rostro nigricante, ad basin flavido: pedibus corneis vix viridi tinctis, iride brunneâ.

♀ *ad. ptil. hiem.* capite et corpore suprâ sicut in ptilosi æstivali coloratis: mento albo: capitis lateribus et gutture rufescenti-cervinis: corpore subtûs argenteo-albo, pectore, hypochondriis et crisso fusco-cinereo lavatis.

*Adult Male in summer* (Alexandria, 19th April). Crown, nape, hind neck, chin, and lores blackish brown; sides of the head and entire throat and sides of the neck rich chestnut-red; upper parts generally blackish with a grey tinge; primary quills dark grey; short secondaries white margined externally with dark grey; breast and flanks blackish grey; rest of the underparts silvery grey tinged with dark grey; beak blackish, the base of the gape lemon-yellow; legs and feet dull horny greenish; iris bright brown. Total length about 8·5 inches, culmen 0·97, wing 3·9, tarsus 1·4.

*Adult Female.* Resembles the male, but is slightly smaller.

*Adult Female in winter* (Butrinto, 9th November). Differs from the adult in summer in lacking the rufous coloration on the neck; the upper parts are coloured as in the summer; but the chin and upper throat are white, the sides of the head and lower throat rufous buff; the underparts are silvery white, the breast, flanks, and crissum being dark grey or brownish grey.

*Young* (Pekin, October). Resembles the adult in winter; but the upper parts are more of a warm-brown colour and paler, and the throat, neck, and underparts are whiter; the lower mandible is yellow, and the upper mandible brown margined with yellow.

*Young in down* (Galicia). Head, neck, and upper parts black, distinctly striped with rufous or rufous buff; underparts white, the flanks like the back; forehead tinged with silvery grey; bill flesh-coloured; iris grey; legs dull flesh-colour with a greyish tinge.

THROUGHOUT Europe generally, from Scandinavia down to Africa, the present species is distributed in suitable localities; and on the latter continent it ranges to the Cape colony. In Asia it ranges as far east as Japan, and southward through the Malay archipelago to Australia and New Zealand.

With us in Great Britain it is a resident and tolerably common in almost every part of the kingdom. Mr. Cecil Smith, however, says (B. of Guernsey, p. 169) that it breeds but rarely in the Channel Islands, being usually met with in the autumn and winter in Guernsey. Mr. Cordeaux remarks that it is most common in winter in the Humber district; and Mr. Hancock says the same with respect to its presence in Northumberland and Durham. In Scotland, Mr. Robert Gray says (B. of W. of Scotl. p. 409), this Grebe is "permanently resident and very generally distributed throughout the country, extending also over the whole of the Long Island or Outer Hebrides. Among the inner group of islands it is well known in Skye, Rum, Mull, Islay, and Jura, as well in those of minor extent, embracing the islands of Gigha, Colonsay, Tyree, Coll, and Iona, &c." He further adds that it frequently breeds at a great elevation on the western mountains, where its nest has been taken as high as about 2000 feet above the sea-level. It does not appear to breed in Shetland, where, according to Dr. Saxby, a few stragglers are met with every winter. In Ireland, as in England, it is a resident, and generally distributed over the island. I do not find any record of its occurrence in Iceland or Greenland; and it has only once been observed in the Færoes, on the 24th November 1845; but it is tolerably common in Scandinavia. Mr. Collett says that it breeds here and there throughout Norway, though everywhere sparingly. It was seen in the summer in the Sigdale; and its nest was found at Mjösen. In the autumn and winter it is seen here and there on the southern and western coasts, and has been obtained at Stavanger, Bergen, and in the autumn and spring at Christiania. Its range in Norway does not appear to extend above 62° N. lat. Nilsson says that in Sweden this Grebe is tolerably rare, but breeds here and there in the central and southern districts, and is found in winter in the latter. It is extremely rare in Finland; and there does not appear to be a specimen in the Finnish collection at Helsingfors. According to Dr. Palmén (Finl. Fogl. ii. p. 664), Tengström shot one at Kexholm; and Aschan states that he has seen both the old and young birds in the Stensundsträsk, in Permå. In Russia it has been met with in the northern portions of the Riazan Government, and it occurs near Moscow. In South-eastern Russia it is said to be rare; and Eversmann only once observed it in the Orenburg Government; but it is numerous in the southern governments from Pultava downwards. Mr. Sabanäeff did not meet with it in the Ural; nor does Artzibascheff include it amongst the species observed by him on the Sarpa. In Poland and the Baltic provinces the Little Grebe is common, and resident in suitable localities; and, according to Borggreve, it breeds regularly in the eastern portions of North Germany, but in the west it is a partial migrant, and is everywhere found only singly. In mild winters it is tolerably common in the west; and Mr. Schalow says that he has seen it almost every winter in open places in the ditch which surrounds the fortress of Spandau. In Denmark it arrives in April and leaves in September, a few remaining later, or even throughout the winter in mild seasons. As above stated, it is a partial migrant in Western Germany; Schlegel says that it breeds throughout Holland, a few wintering there; and in Belgium and France it is resident in the marsh districts, being more numerous in the north than in the southern provinces. It is said to be tolerably common in Portugal and in Spain; and Colonel Irby writes (Orn. Str. Gibr. p. 221):—"The Dabchick is resident in Andalucia, breeding abundantly in some localities; but it is most common (or, rather, mostly noticed) in winter; and how they reach the isolated patches of water, which are

dry in summer, is marvellous, as I never saw one on the wing like *Podiceps cristatus*. The Dabchick, in winter, is almost always to be seen on the inundation at the north of Gibraltar, and takes no notice of the numerous passers by, familiarity breeding contempt."

Passing eastward I find it recorded as tolerably abundant in Savoy, especially in winter, when it is found both on the lakes and on the small pools; in Italy, Sardinia, and Sicily it is resident, its numbers being augmented in winter by arrivals from the north. Mr. C. A. Wright records it in Malta as being by no means uncommon late in August and early in September; and Lord Lilford informs me that he found it abundant in Corsica.

In Southern Germany it is very numerous, and is said by Dr. Anton Fritsch (J. f. O. 1872, p. 378) to be the commonest of all the Grebes in Bohemia, and found even on the smaller ponds. It is said to winter on the Moldau near Frauenberg; but most of those which breed there migrate south in November, returning again in March. It is very generally distributed in Austria, and winters in Styria; but Messrs. Danford and Harvie-Brown say that it is not common in Transylvania. Dr. Krüper records it as being resident and tolerably numerous in Greece, wintering in the Ionian Islands. In the Black Sea it is said to be very frequently met with; and it is a resident in Asia Minor and in Palestine. According to Captain Shelley (B. of Egypt, p. 314) the Little Grebe is plentiful in Lower Egypt and the Fayoom; but he never observed it on the Nile. According to Von Heuglin it is much commoner in North-east Africa in the winter than in the summer; but it breeds there, and is found in Abyssinia at from 5000 to 11,000 feet altitude. Blanford met with it in that country near Zoulla and on Lake Ashangi; and Lefebvre shot a female in May at Adowa, in which he found an egg ready for exclusion. According to Loche it is resident on all the lakes of Algeria, being especially numerous on Halloula and Fezzara; and Favier writes (*vide* Colonel Irby, *l. c.*):—"This small Grebe is resident near Tangier, although to a great extent migratory, passing north during April, and reappearing from October to December. It is resident and especially numerous at the lakes of Ras-Dowra, where the Arabs, during the breeding-season, in a great measure subsist on the eggs of various aquatic birds, destroying a prodigious quantity."

It is abundant near Accra, on the Gold Coast, and has been recorded from Senegambia, the Gaboon, Angola, and Benguela; and Mr. C. J. Andersson writes (B. of Damara L. p. 347), "I have repeatedly shot this diminutive Grebe at Lake Ngami, Otjikoto, Omanbondé, and Walwich Bay, but have nowhere found it abundant, except in the vleys of the Ondonga country, where it breeds in vast numbers." It is also found in the Cape colony, and is said to be common on the lagoons of Natal, being also met with in the rocky streams inland, usually in pairs. Barratt found it near Potchefstroom, in the Lydenburg district, where it was tolerably common; it occurs in Mozambique, and is quite numerous and resident in Madagascar.

In Asia the Little Grebe is very widely distributed. It is found on the Caspian. Mr. Blanford obtained it in Persia. Mr. Hume met with it numerous throughout Sindh; and Dr. Jerdon writes (B. of India, iii. p. 823):—"It is exceedingly abundant in all parts of India, and, in spite of its short wings, appears to wander about a great deal. There is a considerable colony of these birds on the lake at Ootacamund, which is an artificial piece of water; they must consequently have been attracted to the spot when flying at a considerable height. This bird is found in all lakes, tanks, and rivers, and even small ponds, in small parties, occasionally

congregating into larger flocks." Mr. Hume, referring to its occurrence in Yarkand, says (Lahore to Yarkand, p. 298):—"With us this species breeds at very different seasons, according to locality. In Kashmir they lay about the middle of May. Throughout the Upper Punjáb and the Doáb they chiefly lay in August and September. In Jhánsi July seems the favourite month, and in the Nielgherries August. The nests are sometimes fixed to the branches of some water-hanging tree, a couple of feet above the water, and are then made of twigs, grass, leaves, and weeds; but generally they are mere masses of weeds and rush, founded on some tuft of water-grass, and little, if at all, above the water-level. It is almost impossible to catch the old bird on the nest, and almost as difficult to surprise her so far as to make her leave the eggs uncovered. Almost invariably they are concealed by a layer of fresh wet weed; I doubt whether the birds sit much during the day, as I have watched a pair that had a nest containing five (as it turned out) much incubated eggs, nearly a whole day, and found that they never left the comparatively open water in which they were feeding, for the dense rush in which we found the nest next morning, for more than five minutes at a time." Mr. Scully, who met with it in Eastern Turkestan, says (Stray Feathers, iv. p. 203), that it was "observed at Kashgar in November and December, and a specimen was preserved in the former month; it was not numerous, and frequented small unfrozen springs called *Karasu*. The bird was again noticed in a lake at Sughuchak in June. The natives assert that the bird breeds near Yarkand, and call it *Chumighak* (the diver)." It ranges far east, is said to be very common in Upper Burmah, and is met with throughout China to Japan; but I do not find it recorded from Southern Siberia, nor did Colonel Prjevalsky meet with it in Mongolia.

The Little Grebe inhabits the Philippines, Java, Sumatra, the Celebes, the Moluccas, and Timor; and it is also found in Australia, where, according to Gould (B. of Austr. ii. p. 513), "it is very generally dispersed over the whole of the southern portion of the continent;" and it doubtless occurs throughout Northern Australia in suitable localities, though he had no data relative to its range there. I have not had an opportunity of examining a specimen from Australia; but Professor Schlegel, who has compared several examples with his series from other parts of Asia and Europe, unites them with *Podiceps fluviatilis* without the least hesitation. *Podiceps rufipectus*, Gray (in Dieff. Trav. ii. App. p. 198, 1843), however, which replaces our Little Grebe in New Zealand, is quite distinct from that species, and, like *Podiceps nestor* from Australia, has the crown and upper sides of the head covered with white hair-like filaments having the appearance of pencilled markings or streaks.

In general habits the Little Grebe does not differ from its allies; but in appearance it is rather stouter and more thick-set than any of the other small Grebes. Although when well on the wing it flies with considerable ease and speed, it appears to rise with difficulty into the air, and does so consequently most unwillingly, and, as a rule, only on compulsion. Usually when disturbed it prefers to seek safety by diving and hiding amongst the dense aquatic herbage which covers the places it selects for its habitat. It not only frequents larger sheets of water, but is to be met with also on quite small ponds, especially where there is plenty of cover. It swims well, and is an especially good diver, disappearing under the surface of the water like a flash, and remaining some time below. It is an extremely shy and wary bird; and should any one appear near its haunts, it immediately hides until the intruder leaves. As a rule, it is a very silent

bird; and its call-note, which is soft and by no means unpleasant, resembling the syllables *bib bibib* uttered several times in succession, is scarcely ever heard, except near its breeding-places, and there usually in the evening or at night. It feeds almost entirely on insects and their larvæ, occasionally, however, devouring small fishes, small frogs, or shell-fish. Thompson, who examined the stomachs of several obtained by him in Ireland, says (B. of Ireland, iii. p. 192), in the stomach of one were found "the remains of vegetable matter with a few small shells (*Lacuna quadrifasciata*, *Rissoa ulvæ*) and the very young of *Littorina rudis*. The stomach of one of these birds, examined by me in September, was filled with the remains of a few three-spined sticklebacks (*Gasterosteus*), crustacea, and aquatic insects, among which was a perfect boat-fly (*Notonecta*). Another, killed on the 1st of September, contained portions of a *Gasterosteus*, several specimens of the shell *Valvata obtusa*, and some aquatic insects. An individual, captured in the eel-nets at Toome bridge on the 17th of October, contained a mass of the remains of those insects, of which *Notonecta* were the chief. Another bird, procured this month, had its stomach quite full of similar food, with which also and mollusca (*Planorbis carinatus* and *Limneus palustris*) one, obtained at the Shannon, near Portumna, on the 2nd of March 1846, was filled; no feathers appeared in any of the stomachs of the Little Grebe examined by me. Five perfect specimens of the shell *Paludina tentaculata* (*P. impura*, Lam.) were reported to me as found in the stomach of another bird."

The nest of this Grebe is always placed in some quiet, unfrequented pond or lake, and consists of a large mass of aquatic herbage collected together, sometimes approaching the nest of the Great Crested Grebe in size. It is usually amongst the reeds, not close to the edge of the pond, but some distance away, and is sometimes floating on the water, though moored to the rushes or reeds amongst which it is placed. In the centre of this flat wet mass of herbage there is a depression, in which the eggs, from three to five, seldom six, in number, are deposited late in April or early in May; but if the first lot of eggs are taken or destroyed, the bird lays again; and fresh eggs may occasionally be found as late as July. Both male and female incubate, in turn, for about three weeks, and appear very much attached to their eggs; for even if driven off them they will remain in the vicinity, and will return to them directly the intruder has left. When they leave the nest they carefully cover their eggs with some of the materials which form the upper portion of the nest. This is not done hurriedly with the feet as the bird shuffles off its nest, but deliberately and carefully, if the bird has time to do so, with the bill. Mr. F. Bond has sent me the following extract from a letter written to him by Mr. C. Thusnall, who observed a Little Grebe in the act of doing this:—"I have discovered the manner in which the Dabchick covers up her eggs. I always imagined that it was done with her feet; but I now find that the bird does it with her beak. I dropped my boat down upon one the other day who was just hatching; in fact, one egg was hatched; and I found the young one in the water two yards from the nest. I strongly suspect she pulled it out of the nest in her hurry to get away, for the little thing could only float. Well, I suppose she was so intent upon hatching that she did not observe me until I was close to her, say three yards away. She, on seeing me, immediately stood on the side of the nest, and with her beak pulled the weeds from the side of the nest and placed them over the eggs (she took four or five mouthfuls, small), and immediately dived into the water."

When the young are hatched they are most carefully tended by both parents. At first they are able only to swim; but their parents soon teach them to dive, and like the other Grebes frequently take them on their back. When about a week old the young birds dive with tolerable ease, and are well able to take care of themselves, and hide if danger threatens them. It is not improbable that more than one brood is raised in the season; but I cannot speak with certainty on this point.

Although the Little Grebe appears to walk unwillingly, yet it is said to do so with tolerable ease, and can step along standing quite erect on its legs for some distance like its ally the Eared Grebe; and Naumann says that it can even run with tolerable facility.

I fully agree with Professor Schlegel in uniting the Little Grebes which inhabit Asia, the Malay archipelago, and Australia with our European Little Grebe; for a careful examination of a series of specimens convinces me that they cannot be specifically separated. Our European bird differs greatly in the coloration of the underparts, some specimens being pale greyish, whereas others have the whole under surface of the body blackish grey. As a rule, however, almost all the Little Grebes from India have the underparts rather pale. One labelled *Podiceps tricolor*, procured in Bouru by Mr. A. R. Wallace, lent to me by Canon Tristram, differs from ordinary European examples only in having all the upper parts blacker, and the underparts black varied with grey; in measurements it does not differ. A specimen from Galilee, however, is not very much paler, and but little greyer below; and one from Ternate, labelled *P. noctivagus*, is intermediate in every respect. Examples from China and India differ in having the underparts whiter, the whole abdomen of some being silvery grey; but, again, a specimen from S.W. Formosa is undistinguishable from one shot on the Vaal river, South Africa, either in coloration or measurements.

I am indebted to Professor Newton for the loan of two specimens of Little Grebes from Madagascar. One of these does not differ from the specimen I have figured in full summer dress, except that the lower neck is very black, and the rest of the underparts, except the flanks and crissum, are silvery white, the black on the lower neck having the appearance of a broad band; but the other bird, which is labelled "*Podiceps pelzelni* (♀), Madagascar, 20th October 1861," differs materially from any other Little Grebe I have examined. The upper parts are as in *Podiceps fluviatilis*, but are, if any thing, rather darker; the chin is pale ashy grey, gradually darkening into dark ashy grey or sooty grey, which colour pervades the throat and sides of the head below the eye; a narrow white line passes behind the eye along the side of the head; the sides of the neck are chestnut-red; the lower throat is blackish, and the underparts silvery white, the division between the black on the throat and the white being very distinctly defined; the flanks and crissum are tinged with sooty brownish grey. It measures—culmen 1.1 inch, wing 4.05, tarsus 1.47, middle toe with claw 1.9.

Mr. Blanford has described a Little Grebe obtained by Mr. Mandelli in Sikkim as distinct, under the name of "*Podiceps albescens*, Mandelli" (Stray Feathers, v. p. 486, 1877). I have not seen a specimen; but Mr. Blanford assures me that it is distinct from *Podiceps fluviatilis*, though his description would almost lead one to suppose it to be merely an albino of that species.

The specimens figured are an adult male in full summer dress, an adult female in winter, and the young birds in down above described.

In the preparation of the above article I have examined the following specimens:—

*E Mus. H. E. Dresser.*

*a, b*, ♀ *ad.* Butrinto, Albania, November 9th, 1871 (*Hanbury Barclay*). *c*, ♂ *ad.* Alexandria, April 19th, 1862 (*S. S. Allen*). *d, e*. Amoy, China, November 1866. *f*, ♂ *ad.* Takow, April 1865 (*R. Swinhoe*). *e*, *pull.* Galicia.

*E Mus. H. Seebohm.*

*a*. Nepal (*Whitely*). *b*. Formosa, summer of 1860 (*R. Swinhoe*). *c*. Hankow, China, autumn (*R. S.*). *d*. Formosa, summer 1861 (*R. S.*). *e*, ♂. Osenkeo, November 15th, 1857 (*R. S.*). *f, g*. Amoy, November 1866. *h, i*. Amoy, January 1867. *k*. Hainan, February 1868 (*R. Swinhoe*). *l*. Japan. *m*, ♀. Yokohama, Japan (*Pryor*). *n*. Yezo, Japan, September (*Pryor*). *o*, ♀. Ternate, May 11th, 1861 (*Bernstein*).

*E Mus. H. B. Tristram.*

*a*. Catania, Sicily, winter (*H. B. T.*). *b*, ♂. Galilee, May 7th, 1864 (*H. B. T.*). *c*, ♀. Vaal River, South Africa, summer (*T. Ayres*). *d*, ♀. India, June 1867 (*Dr. Jerdon*). *e*. S.W. Formosa, summer of 1861 (*R. Swinhoe*). *f*. Bouru (*A. R. Wallace*).

*E Mus. E. Hargitt.*

*a*, ♀. Inverness, September 5th, 1869 (*E. Hargitt*). *b*. Inverness, June 4th, 1869 (*E. Hargitt*). *c*, ♀. Havre, October 19th, 1872. *d*, ♂. Havre, November 14th, 1874. *e*, ♂. Havre, October 30th, 1875. *f*, ♂. Havre, November 14th, 1875 (*V. Pluche*).

*E Mus. C. A. Wright.*

*a*, ♂. Malta, August 25th, 1861 (*C. A. W.*).







